

3+3+2: The World's Most Famous Rhythm Structure

by Jerry Leake

Aside from the “two” and “four” backbeat of pop and rock that has seized control of western music, the 3+3+2 rhythm structure is utilized in nearly every music tradition on the planet. This simple yet elegant binary phrase is comprised of three strokes and five rests: x - - x - - x - . It is as old as music-making itself, dating back to the Ancient Greeks who called it the dochmiac pattern.¹

Cultural Habituation and Phrase Rotation

The average listener is so highly attuned to the 3+3+2 structure that an isolated hearing of the other two onset rotations (changing the starting point) is likely to cause the rhythm “cells” (3+2+3, or 2+3+3) to flip back to what is familiar in listener memory and experience: 3+3+2. Indeed, the gravitational force of 332 is possibly stronger than the desire to feel comfort with the less familiar 323 and/or 233 rotations.²

If one hears 323: x - - x / - x - -

One may feel 332: x - - x / - - x -

If one hears 233: x - x - / - x - -

One may feel 332: x - - x / - - x -

“Downbeat ambiguity” is a result of cultural habituation. A musician from the African country of Benin, for example, would be quite comfortable with 233, which is a common rhythm structure to their musical environment. It takes practice and experience to feel comfortable with the obscure relatives of 332.

332: Balance and Syncopation:

Music needs space to be coherent and enjoyable. In the 332 phrase the absence of sound (five rests) is greater in number than the actual projected sound (three strokes). As such, there is room for additional instruments to thread within and around the pattern without cluttering the overall “groove” matrix. Analysis reveals perfect balance between the first and second stroke, and the second and third stroke: there is an equal number of rests between these first two cells: 3 + 3 = symmetry. In the first two strokes a brief cross rhythm in “3” is revealed. It is the “2 cell” that creates the jarring syncopation that brings the phrase back to “1.” Inexperienced players often drag the momentum of the 2 cell, especially at fast tempos with cycles racing like seconds on the clock.

332 in African Music: Gahu³

Ostinato time lines played on a piercing iron bell establish the framework within which a popular African dance called Gahu from the Ewe people of coastal Ghana is performed. The Gahu bell, a 3+3+2 structure, is shown below.



At fast tempo the above pattern generates a strong sensation of perpetual motion that keeps the music driving forward. The last stroke of the bell (the “2” cell) fuels, at times even accelerates, the cyclic momentum. In a 4/4 illustration of the Gahu bell (below) one can see the resolution of the 4th beat leading into the 1st beat. The dynamism and energy of 4 leading to 1—4 1 2 3 4 1 2 3 4 1—is a critical component to the 332 structure. The previous two rotations do not include “4 to 1.”

Gahu in 4/4: beat 4 leading to 1



332 in Afro-Cuban Music: Clavé⁴

The 332 phrase is none other than the first half of the son clavé of Afro-Cuban music. It is perhaps the first rhythm that came to mind while reading this article. The wooden clavé (literally “key”) functions in a similar manner as the iron bell of Ewe music. Clavé and bell time line structures are the primary elements that inspire composers and performers to create and improvise music.

The son clavé is twice as long as the Gahu bell, spanning two bars of 4/4. Consider the first bar of the clavé the “Call” or “question” with the second bar tagged the “Response” or “answer” to the question asked in the first bar. In Gahu

there is no “response” built within the bell phrase; the short duration and high energy of the pattern leaves little room for internal dialogue. The Gahu bell functions more as a propellant to the music. Shown below is the 2-bar son clavé.



The clavé contains five “cells” (attack+duration) that can be represented as: 33424. The “1” marks individual strokes, all other numbers are rests. Count numbers while clapping on each “1.”

- 1 2 3
- 1 2 3
- 1 2 3 4
- 1 2
- 1 2 3 4

332 in North Indian Music⁵

Indian music does not incorporate “time line” concepts, instruments or support drummers. In a typical performance, one tabla player provides the entire rhythm support to the music. These 332 examples refer to the underlying structure within which more involved drumming patterns and ornaments are played.

The first is the accompanying 16 beat pattern called “Sitar Khani.” It also goes by the name “Ada Tala.” Sitar Khani is usually played in a medium tempo and accompanies light classical instrumental or vocal performances of Hindustani music. Western notation is not used to illustrate tabla drumming. The use of syllables (called “bols”) represent specific drum strokes, and a dash “–” indicates rests. The four beats for each line of syllables are located in the top row of numbers. Recite Sitar Khani while clapping the beat.

| | | | |
|-------|-----------|----------|---|
| 1 | 2 | 3 | 4 |
| dha – | ga dhin – | ga dha – | |
| dha – | ga dhin – | ga dha – | |
| dha – | ka tin – | ka ta – | |
| ta – | ga dhin – | ga dha – | |

It is the “dha” and “dhin” strokes that receive emphasis, clearly outlining the 332 structure.⁶ “Four leading to one” is represented by the bol “dha” which is the most prominent stroke on tabla.

Shown below is the first line of Sitar Khani with the top row of numbers now representing the individual 332 “cells.”

| | | | | | | | |
|------------|---|----|-------------|---|----|------------|---|
| <u>1</u> | 2 | 3 | <u>1</u> | 2 | 3 | <u>1</u> | 2 |
| <u>dha</u> | – | ga | <u>dhin</u> | – | ga | <u>dha</u> | – |

The overall gestalt of the Sitar Khani groove is “funkiness.” Whenever I introduce this phrase to new students, they start to feel the inherent “hip” quality to the pattern: they want to dance! Sitar Khani is not “square” and rigid in its shape; rather, it is round and full of life, as are all other 332 rhythm creations.

Keharwa, a popular folk rhythm, is an 8-beat phrase that can be ornamented and reconfigured in countless magical ways. Recite Keharwa below while clapping the beat.

| | | | | | | | |
|-----|----|----|-----|----|----|------|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| dha | ge | na | tin | na | ka | dhin | na |

The 332 underpinning is less clear than the Sitar Khani, until we begin to accent the bols **dha**, **tin** and **dhin** (beats 1, 4, 7). Shown below the top row of numbers outline the 332 cells. While reciting, clap on the “1s” (the beginning of each cell) to outline the 332 structure. “Four leading to one” is strongly present.

| | | | | | | | |
|------------|----|----|------------|----|----|-------------|----|
| <u>1</u> | 2 | 3 | <u>1</u> | 2 | 3 | <u>1</u> | 2 |
| <u>dha</u> | ge | na | <u>tin</u> | na | ka | <u>dhin</u> | na |

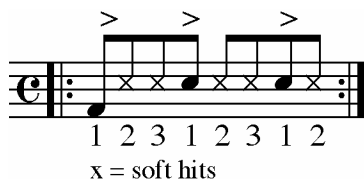
332 in Spanish Flamenco Music⁷

One of the most basic and important rhythms played on the cajon (box drum) in Spanish Flamenco music is “Tangos” (not related to the Argentinian Tango). Like the previous rhythms, it is rendered in a binary pulse, the tangos

falling into 4/4 meter. Cajon accents outline the 332 structure with all other strokes played lightly, as if invisible. The most common pattern places a bass tone on the “1” downbeat with the other two accented strokes played as “slap” snare-like strokes at the top of the cajon. The key is to always alternate strokes from strong to weak hand. Shown below are three elements: 1) the top row 332 numeric shape; 2) middle row cajon strokes: B = bass, S = slap, l = light; and 3) bottom row strong and weak hand alternating strokes: S = strong, W = weak. Each underlined “1” marks the 332 cells.

| | | | | | | | |
|----------|---|---|----------|---|---|----------|---|
| <u>1</u> | 2 | 3 | <u>1</u> | 2 | 3 | <u>1</u> | 2 |
| B | l | l | S | l | l | S | l |
| s | w | s | w | s | w | s | w |

Flamenco Tangos in western notation:



In Flamenco music, the rumba rhythm incorporates a similar 332 pattern as tangos, only slightly faster, and with different strumming techniques applied to the guitar.

332 in Middle Eastern Music⁸

There are numerous 332 rhythms found in the music of the Middle East and Mediterranean. The Macedonian gypsy (Romany) version is called “Cocek” (CHO-CHEK) and has a spacey swing to it. In other areas of Greece these rhythms are used to accompany many songs and line dances and are known as “Syrto,” which tend to rock back-and-forth on alternating measures.

In the two rhythms shown below Dum = heavy, low-pitched center of the dumbek; Tek = bright, high-pitched edge or side of the drum; and ka is an ornament played on the edge of the drum.

Cocek (4/4)

| | | | |
|-------|-------|-------|---|
| 1 | 2 | 3 | 4 |
| Dum - | - Tek | - Tek | - |

Syrto (4/4)

| | | | |
|-------|--------|----------|----|
| 1 | 2 | 3 | 4 |
| Dum - | ka Dum | - ka Tek | ka |

Conclusion

In the limited scope of this article I have barely scratched the surface of the numerous world music traditions that incorporate 332 rhythm structures. I encourage you to observe and categorize other applications, perhaps combine sound and tradition to create new music that respects ancient roots, while exploring your imagination. The possibilities are as vast as the present-day applications.

End Notes (see “Sources” for specific publications)

1. Godfried Toussant has amassed an extensive list of 332 examples in his paper “The Euclidean Algorithm Generate Traditional Musical Rhythms.” As he states, the 332 structure is the bass line backbone to Elvis Presely’s hit “Hound Dog,” with the band syncopating the pattern with hand clapping. 332 is often called the “Habanera” rhythm used in hundreds of rockabilly songs during the 1950s. It can be heard in improvisations of a New Orleans Jazz Band, popular in ragtime music and more traditional jazz styles. Toussant lists many other popular and obscure examples found throughout the world.
2. David Locke and Jeff Pressing first introduced the concept of African bell pattern rotation/transposition; both also use the term “Mode” to describe the different onset renderings of the bell pattern. Willi Anku first introduced the term “Rotation.”
3. David Locke’s insightful book “Drum Gahu” is the most comprehensive source for explanations and transcriptions of Gahu where he incorporates a 4 beat time line. My book “Master Drummers of West Africa” uses the 2 beat time line that was taught to me by Reuben, Emmanuel, and Victor Agbeli in Ghana.
4. Bertram Lehmann’s Masters Thesis (Tufts) is the most comprehensive study to date on the subject of Clavé.

5. Tabla lessons with Rajeev Devasthali and Todd Nardin exposed me to the two rhythms discussed in this article. I am also grateful to colleague and sarod player George Ruckert for his keen insights into Indian music, as well as our ongoing practices and performances.
6. The stressed drum strokes dha and dhin incorporate both low and high drums played simultaneously. The less stressed “ga” stroke is the low drum played alone. The third line: “ka” and “tin” is where the low drum drops out before coming back in at the fourth line.
7. My continuing studies and performances with Boston virtuoso Flamenco guitarist Juanito Pascual has helped me to shape my observations with flamenco drumming, and the music in general.
8. Middle Eastern examples are drawn from the informative web page created by “Jas.”
http://72.14.209.104/search?q=cache:vnfMjL_-7u4J:www.khafif.com/rhy/+middle+Eastern+dumbek+rhythms&hl=en&ct=clnk&cd=3&gl=us

Sources

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