Groove, Grid and Cycle:
Expanding awareness of pulse, meter, and structure

By Jerry Leake

Introduction

My source material for this article is derived from three decades of studying and performing traditional African and Indian music. All the examples are adapted to playing drum set. It is not essential for you to acquire traditional background on a world percussion instrument. To begin… what is a groove?

Part I: Groove

Grooves are built around repeating cycles of time with sustainable and repetitive components—mostly in the form of rhythm from the bass and drums—grounding the listener to an organization of musical patterns. However, potent grooves can be played using nearly every instrument in the world. It is the player's approach and attitude that determines the instrument's role within the ensemble. Artists like James Brown incorporate strong grooves played on rhythm guitar, which essentially functions as a percussion instrument.

The primary strength and sustainability of a groove centers on rhythmic repetition and redundancy. It is a critical element for enticing listeners who may not understand why their senses are responding in certain ways, why the urge to move their body surfaces within the vibrations. Repetition makes it possible for listeners to store musical phrases into memory. It is the stable ground beneath their feet. However, without some form of development or variation in the music, listeners would become bored and the music becomes static.

A well-defined and interesting groove possesses a magnetic pull that compels people to actively participate as listeners, dancers, and players. This pull can encompass an unlimited range of musical styles, cultures, and instruments. I am a member of two unique world-music ensembles. Natraj integrates music from Africa, India into tight contemporary arrangements with plenty of space for soloists to explore improvisation. Grooves are always present. Because compositions introduce regular variations and shifts in form, the listener does not have a chance to become fully immersed and habituated within a given groove before it changes to something else. Depending upon the length of solos, the duration of Natraj compositions tend to be similar from one performance to the next.

Another "dub trance groove" band, Club d'Elf, explores music from the bottom up. The bass, drums, and percussion establish grooves that are

sustained for much longer periods of time (20 minutes or more). Generally, players avoid intricate variations and ornaments that might throw listeners off. Such distractions are most noticeable when people listening with their eyes closed suddenly open their eyes in response to something audibly unexpected. When I anticipate changes in the music, I observe how listeners respond to musical shifts. When a change occurs, perhaps for a moment they wonder what had severed their trance-like state. The well-planted groove had taken listeners to a relaxed and comforting place, while subtle or profound variations maintain their interest no matter how long the composition may last.

All "dance music" genres rely on well-defined and heavy grooves to fuel the kinesthetic body-moving energy. This is especially true of electronica such as techno and jungle that contains scratching, digital sampling and looping of other recordings. Ambient (new age) music, however, does not introduce strong groove elements that might cause people to dance. Ambient often incorporates high-end sound generating technology, and functions more as a backdrop to an environment, not the propelling element within the environment.

Repetition for its own sake is not the point. As mentioned, music needs to have variation to sustain listener interest. As players it requires a level of patience and discipline to know "when to change" (or conversely "how long do we stay here"). In this setting discipline is necessary for the rhythm-section to maintain one pattern throughout most, if not all, of the composition. In the early days of d'Elf I felt as though I were assuming the role of a live "drum machine." But I soon realized that such an attitude defeats the purpose of the music and contradicts the essence of "groove." In these settings, musicians must achieve a higher level of humility without trying to "entertain" with flash, variation, and rapid progression through musical form. Patience and trust are the essential elements that help shape the music.

Sound + Time = Groove!

The player does not need to possess incredible technique on their instrument, or have assimilated volumes of traditional repertoire to groove with feeling and musicality. Quarter notes played on an empty bottle with a coin can "swing" on profound levels. If the sound of the bottle projects in consistent and controlled ways, if the space between strikes is intuitively balanced, if the soul meets the ground, then the musician will find their place, pace and space within the groove pocket.

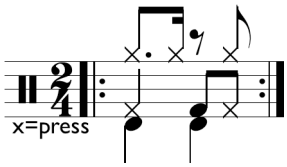
Drum Set Examples

By in large, drummers understand the meaning of the word “groove” for playing repetitious patterns to support any style from rock, funk, Latin, Afro-Cuban. Jazz drumming, however, is not (necessarily) built with a groove sensibility and foundation. Jazz drummers are constantly in a state of musical flux and change, flowing with and around the entire ensemble. The drummer functions not only as the “engine” to the music but also the spontaneous spice to the composition and soloists.

As mentioned, a groove is usually (but not exclusively) a 1- or 2-bar pattern that is maintained for an entire section of music,. Ornamentation is added to retain “human” interaction in the moment. The smallest meter that will begin my examples is 2/4. The pulse is binary (8^{th} and 16^{th} notes) and two quarter notes occupy one bar. Even in slow tempos a single bar is short. In very fast tempos it can move at a blinding rate of 1-bar per second. For our purposes, establish a medium tempo with each beat lasting 1 second for a 2-second “groove.”

This first series of examples focus on a phrase inspired by the African rhythm “Gahu” adapted to drum set. The 3+3+2 clave-like bell pattern is played with the strong-hand on cymbal, the bass drum keeps the “beat” and the weak-hand plays the “sogo” drum pattern on floor tom. Pressed tones onto the floor tom are achieved by pressing the stick into the center of the head. A plastic drumhead is not as “sweet” as goatskin, but the approach still works. Example 1 below sets the stage. We will refer to this as phrase “A.”

Ex. 1



Part II: Expanding the “Horizontal” Grid

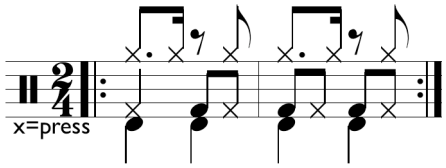
The above short groove is loaded with potent energy to propel the music without variation. The following examples will “expand the grid” of our horizontal awareness by changing the size and shape of the pattern.

Our initial groove is established in a grid matrix of 2/4 meter. Very little muscle memory is needed to maintain the groove, as is minimal thought and preparation. The player experiences no “brain sweat” or technical challenge, nor is s/he needing to plan ahead while in the moment. Our awareness of “musical time” is as concise and clear as the pattern itself.

We can take phrase “A” and create a 2-bar phrase (“B”), as shown

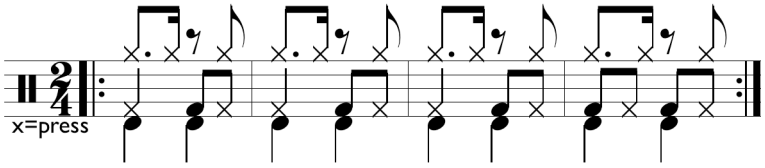
below in example 2. These treatments are based on sogo improvisations that have been structured for our purposes.

Ex. 2 (B-phrase)



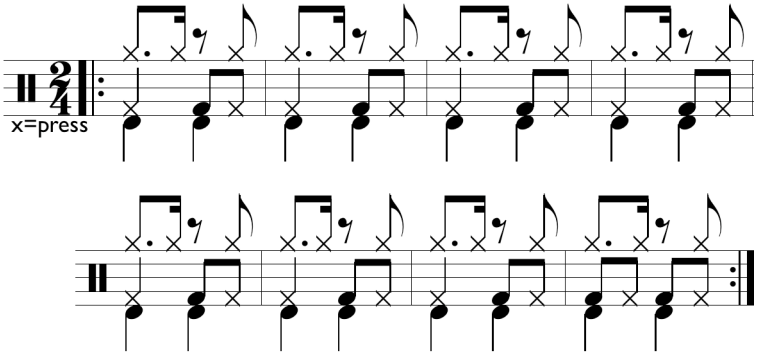
We can create a 4-bar phrase “C” using the treatment shown in example 3. Phrase C is built using “A+A+B.”

Ex. 3 (C-phrase)



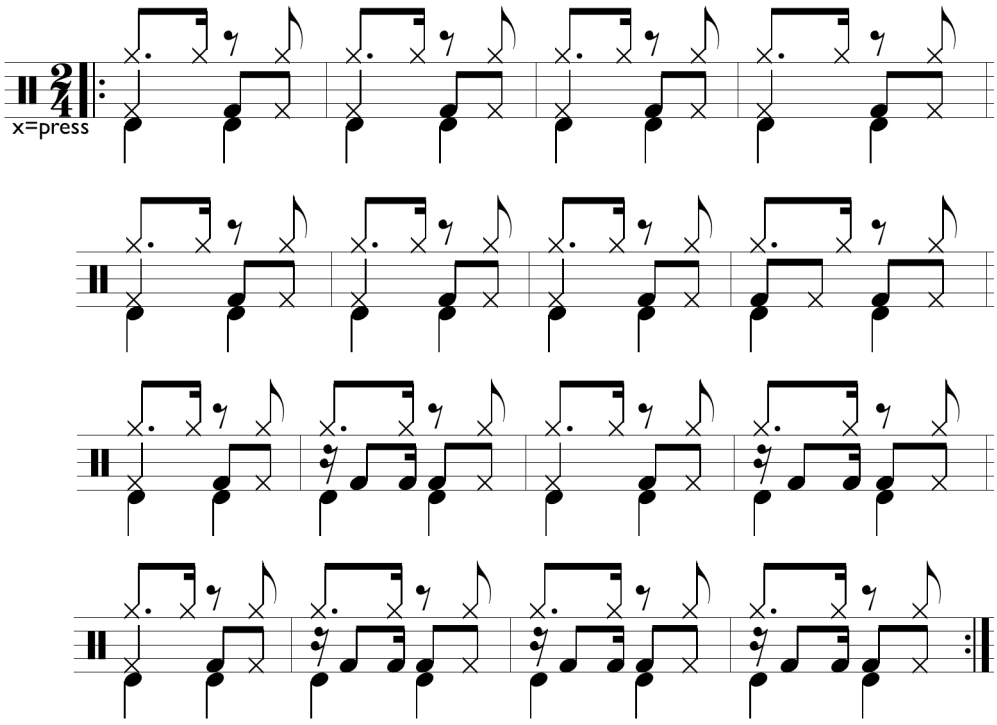
Continuing this doubling model we can derive an 8-bar phrase thusly: A A A A A A B (example 4).

Ex. 4



Our paradigm projects us to a 16-bar phrase, using more challenging variations for our weak-hand sogo pattern (example 5). Once you crack the code of limb independence, you will discover the spark-like combinations of energy and gravity with the unchanging Gahu bell. The bass drum continues the rock-solid “ground beneath the feet.”

Ex. 5



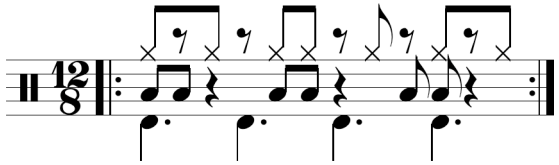
When you develop comfort with hand mechanics inside the enlarged form you should start to feel an expanding awareness of time and structure inside your mind and body. Horizontal grid expansion is not something you can directly point your finger at as it happens, nor is it something the listener will notice as you play. What results is an enhanced internal Gestalt, a higher-level sensibility of pattern structure as it relates to a "functional groove."

12/8 structures

Our work thus for has been based on the fundamental practice of developing a short groove with increasingly larger and ratio-based phrases. Longer phrases in 12/8 and 24/8 reveal more challenging treatments and grid expansion of just a "single bar" pattern. Shown below in example 6 is the 12/8 Agbekor/Bembé bell, bass drum in a 4 pulse (the beat), and a cross-rhythm in "3" played on drums. Because ternary 12/8 is significantly larger than binary 2/4 your conscious/subconscious grid awareness will expand in an equal amount.

Notice in this, and the phrases that follow, how drum patterns align on or off of the bell pattern. This creates internal anchor points to solve the puzzle of the phrase. In example 6 below, the 3 cross-rhythm played on the drums, in relation to the bell is: on off / on on / of on. This alignment pattern is a retrograde mirror of itself.

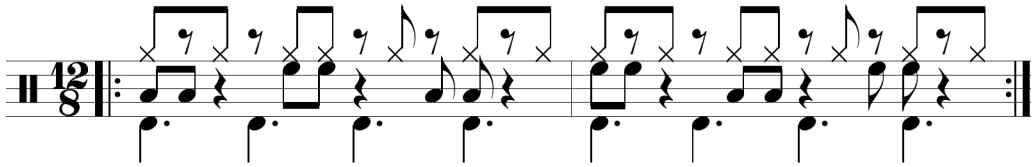
Ex. 6



The challenging phrase above is part of an intensive study on cross-rhythm, independence, and language that I explore with my drum set students. It explores not only a “horizontal grid” awareness but also “vertical grid” awareness (discussed later)

We can double our awareness even further by orchestrating the 3 cross-rhythm using different drums to create a 2-bar phrase, alternating from snare to tom. The phrase below begins with snare in bar one, flipping to the tom in bar two, and back to the snare in bar three to repeat the 2-bar phrase. Example 7 below should be played for an extended period to absorb (through relaxed meditation) the sophisticated “melody” and expanded psychological awareness.

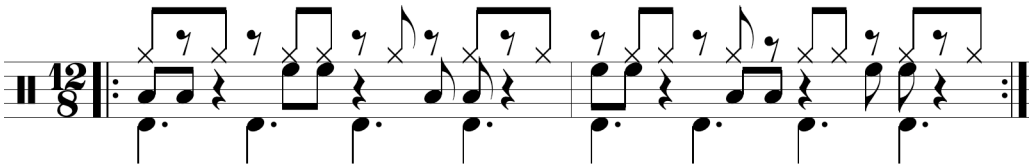
Ex. 7



The above pattern can also be reconceived in the player’s imagination as 24/8 meter: 2 bars of 12/8 combine to form one long phrase. A multitude of variations can be derived using drum orchestration to create even larger 4-bar phrases.

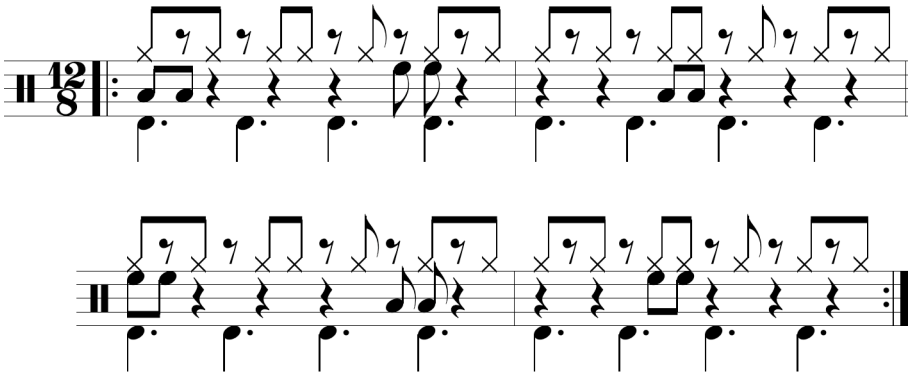
Higher-level grooves and grid expansion arises from phrases built inside a pure 24/8 super-structure. Shown below in example 8 the bell pattern in the second bar is different from the first bar. The 2-bar bell structure is known as “Palo Bell” in Cuba (“Palo” means “religion”). Think of the first bar as the “Call” (question) and the second bar as the “Response” (answer).

Ex. 8



We can expand the grid of example 7 by playing every other pair of 3 cross rhythm patterns. Shown above in example 7 are 6 cross-rhythm pairs (3 snare, 3 tom). If we play just the 1, 3, and 5 pair while alternating the snare/tom sequence we yield a 4-bar phrase derived from the same mechanics as before (example 9). In this way, we can see how much influence drum tone "melody" has on our time/grid awareness, independence, and player confidence. When comfortable with example 9, apply the 2-bar Palo bell phrase from example 8 into the drum melody. Clearly, there are no limits to how deep you can go.

Ex. 9



Adjogbo and 24/8

The phrases that follow represent my most challenging arrangements of African repertoire. They incorporate a unique bell pattern from the Ewe composition and dance called "Adjogbo". Even in Africa, the bell pattern (which, in essence, is a large 3 cross-rhythm) is often *not* utilized due to its complex and potentially confusing structure. David Locke states that when this unique bell pattern is played, the more identifiable 12/8 shaker pattern functions as a "time-keeping reference" with the bell adding an upper-level ornament to the phrase.

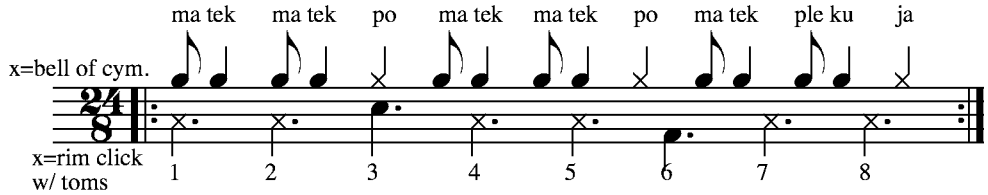
The Adjogbo bell patterns is built as a strand of three identical subunits: x x – x x – x- . Each individual subunit comprises a 3+3+2 shape, equaling 8 total pulses (strokes + rests). Multiply 8 pulses by 3 subunits and you have 24/8. Because the three subunits are identical it is easy to lose one's place in time ("where is the 1?").

An important aspect of the Adjogbo bell is the addition of pressed or muted tones by keeping the stick pressed against the bell after striking. The "X" note-head in the bell phrase marks pressed tones, all other tones are played with normal resonating strokes. In drum set context you can use a mounted cowbell to play open and closed bell tones, or use ride cymbal with the pressed tone played on the "bell" of cymbal, all other strokes played on ride.

To aid in my own awareness, I incorporate a treatment of the matekpo bell language from the Ewe people. This marks the three subunits and creates distinction in the third unit. The syllables "po" and "ja" mark the "pressed tones" on the bell.
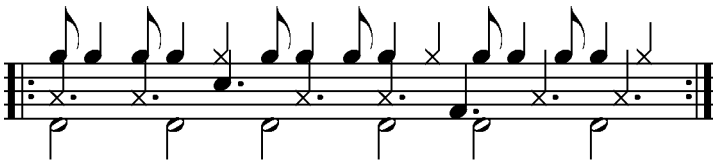
The drum phrase shown below in example 10 represents two important items: the 8 pulse units (numbered) that mark the "8-beat", and an orchestration of the beat using different drum tones to establish a large 3+3+2 melodic contour. Practice this first with rim clicks to lock in the beat to the cymbal pattern. Then apply the drum melody that will cause you to feel and hear the phrase beyond its role as "beat keeper."

Ex. 10



Example 11 below adds the bass drum playing a 6 cross-rhythm. This aligns comfortably with each bell subunit, thereby stabilizing the phrase with anchor points. We can see that the relationship between the bass drum in 6 and the drum melody in 8 results in two sets of 4 over 3 (4:3). The change in drum melody between each 4:3 set disguises the similarity between the first and second half of the polymeter.

Ex. 11
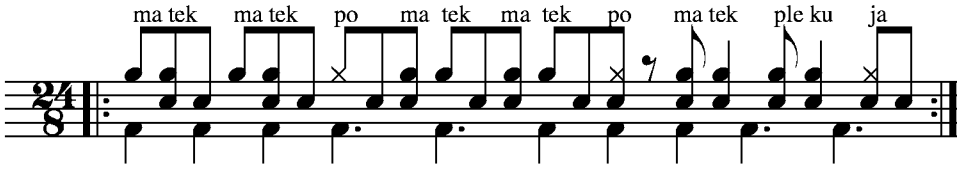


Shown in the next two high-level examples is the 24/8 adjogbo bell, the

bass drum playing a totoji-inspired rhythm (my treatment), and two versions of the “kagan” rhythm. (Kagan is a small barrel-shaped drum that adds off-beat “spice” to the phrase.)

The first kagan phrase shown in example 12 is not normally used in Adjogbo. I include it to reveal how the kagan rotates to three unique positions when set to the adjogbo bell. In the first subunit the kagan is being chased by the bell: bell = “x x –“ whereas the kagan = “– x x”. In the second subunit the kagan is chasing the bell: bell = “– x x “ / kagan = “x x –” (the opposite of the first subunit.). The final mathematical combination occurs when bell and kagan align, resolving any chasing/following tension they previous experienced. (Note: in example 10 the 8-beat drum melody also rotates to three different positions inside the bell.)
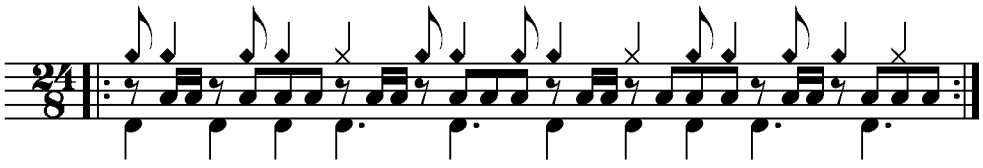
The bass drum now incorporates the rhythm of the totoji drum, adding more unique designs to our evolving phrase. You may want to begin with the basic “8-beat” for bass drum before attempting this new syncopated treatment.

Ex. 12



Example 13 below contains the adjogbo bell, the traditional 2-beat kagan and bass drum with totoji imagination. Notice in this expanded grid how the three separate limbs render phrases built in a 2 over 3 over 4 matrix. As stated, the bell comprises three subunits (“3”), the bass drum is built using two equal 4-beat totoj phrases in both first and second half (“2”), and the kagan is built with four 2-beat phrases (“4”). Not only are we exploring high-level time and grid awareness, we are also rendering an intense 2:3:4 phrase combination. The difficulty of this phrase cannot be exaggerated. Such higher aesthetics of psychological time awareness (grid) and limb independence (2:3:4) will require careful and patient study.

Ex. 13
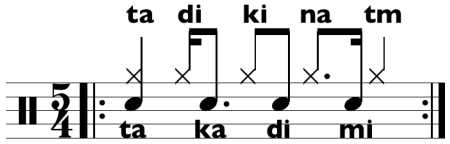


Expanding the “Vertical Grid”

The previous “horizontal grid” study explored the basic concept of expanding a gahu-inspired phrase from 1-bar to 16-bar structures. We also examined 12/8 and 24/8 super structures that expanded our “horizontal grid” awareness and our “vertical grid” awareness. That is to say, we felt more internal “depth” to the phrase, using cross-rhythms and rotations while also feeling the width of the phrase (especially in 24/8 treatments).

However, it is possible to expand the depth/vertical grid of a short single-bar groove. To represent this I focus on a drum set pattern derived from mathematical principles and language of South Indian music. To begin, our hands will establish a 5 over 4 polymeter: 5 in the cymbal and the 4 in the snare. Example 13 (in 5/4) establishes this phrase using *ta di ki na tom* language in 5 for the cymbal and *ta ka di mi* language in 4 for the snare. As you become comfortable with the hand mechanics, alternate speaking 5 and 4 languages for added focus and phrase ownership.

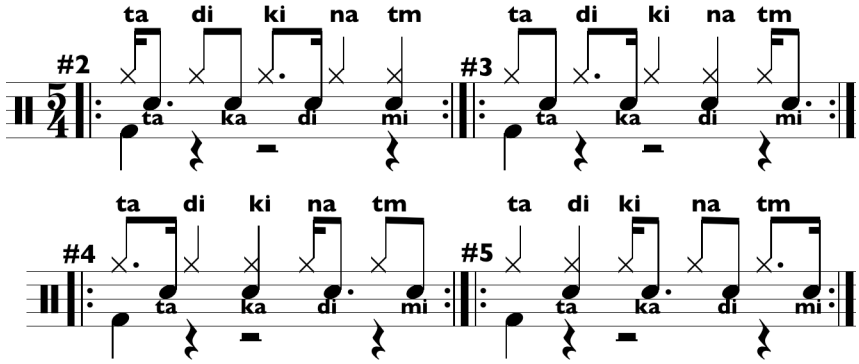
Ex. 13:



Phrase Rotation

There are five possible positions achieved by rotating the snare to each successive 16th note. Example 14 reveals the remaining four snare positions (labeled 2–5), with 5 and 4 languages included. To help retain your awareness of the “1” downbeat, add the bass drum on beat “1” as shown.

Ex. 14

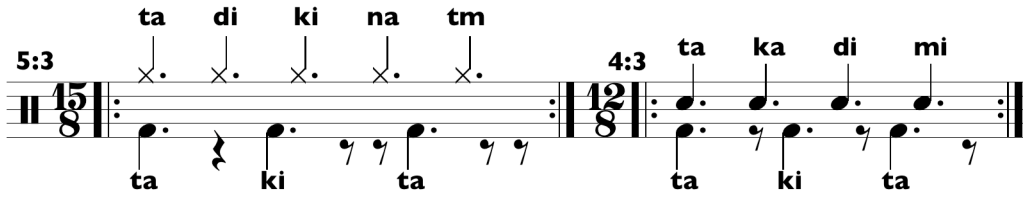


In the above 1-bar grooves your vertical grid awareness has been enhanced using mathematical theory and phrase rotation. The less-familiar language component will be challenging so work your way in gradually.

5:4:3

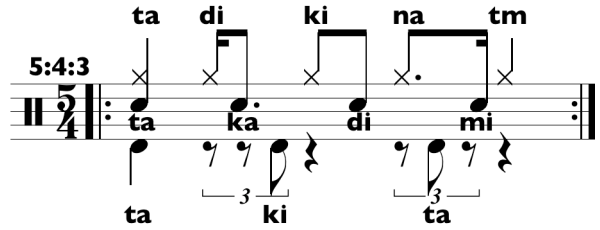
Our mission is to now add in the final layer by incorporating the bass drum in a 3 cross-rhythm to the previous phrases. We will begin with the first snare position. Playing and speaking the bass drum in "3" to the cymbal in "5" establishes a 5:3 ternary matrix that can be conceived in 15/8 meter. Thi is shown below in example 15. The bass drum in 3 also has a 4:3 relationship with the snare in 4, as seen in the 12/8 example. Work on these paired combinations before applying all three layers/gears.

Ex. 15



The goal is to now combine 5:4:3 time layers in 5/4. Success will allow you to feel the complex depth of the 3 gears/layers working (and fighting) inside a single bar groove. In example 16 below using the first snare position, notice that all three elements come together on beat 1. None of the other strokes align at any point inside the phrase. Beat "1" is your only reliable anchor point. It marks phrase origin and destination. The three time layers (gears) include their corresponding spoken language to feel the complete depth of the expanded vertical grid.

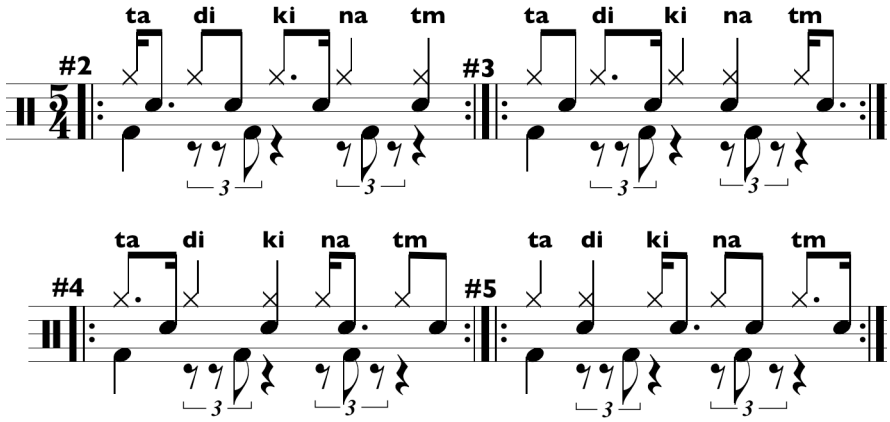
Ex. 16



Of course, it is possible to rotate the snare to its remaining four positions while maintaining cymbal and bass drum positions, as shown in example 17. In these, I retain only the langue in 5 to avoid unnecessary clutter. As you achieve mastery, try to speak the 4 and 3 languages. In all of these

treatments the cymbal and bass drum begin together on beat 1. In example 2, snare and cymbal align on beat 5, then on beat 4 in #3, beat 3 in #4, and beat 2 in #5. The point is for you to keep these anchor points close in mind and body for overall fluidity and comfort.

Ex. 17



The key to playing such unusual phrases is to relax, striving for a high level of meditation and "surrender" to all the inherent tension. With so many gears working like a complex clock, you must be patient to let time run its course. Always work in additive stages: focus on the hands first before integrating any spoken languages. Then apply the bass drum without language to feel the working gears in motion. Finally, add in the languages for the highest level of phrase "ownership."

Part III: Cycle (Rhythm Cycle, Time Cycle)

Qualification

The word "cycle" when discussing musical time is as ambiguous (and tenuous) as the word "grid" or "grid expansion." *Grid* and *cycle* have nothing to do with how music is perceived by a listener. They have no awareness of how a player organizes phrases just as a movie attendee does not know the behind-the-scenes aspects of how a film is made. For some people, knowing such background information spoils the illusion of reality, fun and entertainment.

Skilled musicians possess a large storehouse of repertoire, licks, techniques, and things that work well for playing in one style (and moment) to the next. They also have philosophical concepts that guide their train of thought, providing added purpose and foundation to their musical ideas.

“Concepts”, by in large, do not require a great deal of “information” or “note taking” to grasp; they are generally simple ideas which generate large avenues of possibility and application. It is the concept of “cycle” that we now need to address, one that exclusively centers on psychological awareness unique to every musician.

What is a cycle? Do you currently play with cyclic awareness? Does your music require such higher aesthetics of time awareness? If you don’t play with cyclic awareness are you any less the musician than someone who does? These are typical questions that arise when tackling a foreign and somewhat abstract notion. For the most part, all music that has a tactus pulse (beat) can be thought of as taking place within a cyclic framework. Our previous 2/4 “groove” occurs in a very short cycle of 2 beats, whereas the 24/8 expanded grid examples occur in a much larger cycle. So where does the distinction take place? And why is it important?

Indian Music Cycles

In academic and theoretical terms the word “cycle” tends to reference North Indian Classical music that begins a performance in slow and long rhythm cycles: ati-vilambit tintal (very slow 16-beat cycle). In some instances, a 12-beat cycle (“Ektal”) can be slowed down to such a degree that each “beat” (matra) is subdivided into 8 smaller beats. This creates the illusion of a 96-beat cycle that requires over a minute of time to complete before starting again. This extreme timeframe can be baffling to even educated listeners. It has even confused tabla players who get lost within the epic construct, miscalculating subdivisions, accidentally changing speed, and dropping entire beats. Even the featured artist and other accompanying musicians might not notice drumming/timekeeping errors. In such stretched contexts, time takes on deep and profound psychological awareness in the mind, body, and spirit of the player. How the listener responds to abstract timeframes is another matter entirely.

When comparing African timelines to Indian cycles, I use graphic shapes to represent the progression of time. In terms of a short groove, we can imagine bars of time chugging along, repeating indefinitely until a change is needed. In the Ewe music of Southern Ghana, one can imagine a constant and consistent “wave” moving from point A to point Z (Time’s Arrow). There is little change in tempo, aside from heightened player energy. A short wave reflects short “groove” cycles (2/4, 4/4) and a longer wave reflects longer “expanded grid” cycles (12/8, 24/8).

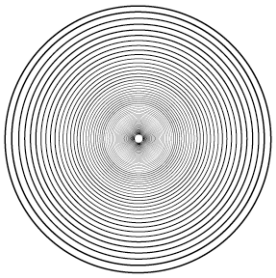
African Wave (constant tempo, short/long cycles)



Since we can talk about bell patterns as “bell cycles” the word “cycle” is clearly not exclusive to describing and theorizing Indian music. But an important distinction needs to be made.

If a “wave” best reflects the flow of African music, then a “circle” (Time’s Cycle) will best reflect cycles of Indian music. Not just a singular circular outline, but increasingly smaller circles built within the larger, gradually shrinking in size as the music accelerates through time. Time acceleration is an important characteristic of North Indian classical music. Over long periods of development circles/cycles are spinning so fast that they can no longer be visualized. As “sam” (beat one) flies by it is hard to hear phrase endings flowing into new beginnings. Time in this context moves so fast that a group of 4 beats (called “vibhag”) may even be perceived as the “new pulse.”

Cycle of Indian Music
(long cycle accelerating through time becoming short cycles)



In very slow, long rhythm cycles the tabla player feels a profound sense of “moving away from home” in time before “approaching home” from the back end of the cycle/circle. In the groove and expanded grid examples from Part I and II, such “moving away from home” awareness does not take place. In those situations you are “in the moment” of time as opposed to feeling the sensation of “departing and returning” that occurs with deep cyclic awareness.

Indian Context
In general South Indian Carnatic music is based on mathematics. Players assemble strands of cells together to form a chain of “words bound together”

(the definition of the spoken drum language called "solkattu"). In North Indian Hindustani music, tabla repertoire is based more on composition (themes) with numerous variations that develop the theme. For our immediate purpose a South Indian reference allows us to feel more of an expanded cyclic awareness with pattern/limb familiarity and repetition.

Drum Set Examples

The three examples in 5/4 meter shown below are inspired from South Indian (Carnatic: mridangam) context. Phrases are built by establishing a constant drum structure in bar 1 that repeats in bars 2 and 3. It is the cymbal pattern (in a "3" cross-rhythm) that rotates in and around the phrase, creating tension and different anchor points.
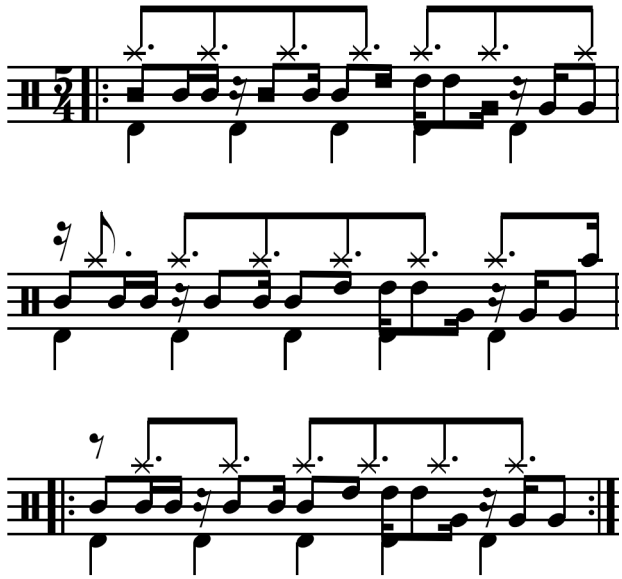
Language

The phrase below utilizes the snare, mounted tom and floor tom to mark the four identical shapes of the 5-syllable phrase: "*ta di ki na tom."* In the examples only the 1st, 3rd, and 4th syllables (*ta – ki na –*) are rendered (the "– " symbol represent "rests" within the phrase).

As you play the drum melody, try to speak the four syllable sets that align with drum strokes: *ta – ki na – / ta – ki na – / ta – ki na – / ta – ki na – /.* In our notation the snare plays the first two syllable sets, the tom plays the third and floor tom plays the fourth. The "square" note head marks the beginning of each *ta – ki na –* series. Again, the bass drum and drum melody in all three bars are identical (repetition and familiarity). It is the cymbal pattern in "3" that establishes cyclic awareness and challenge, as seen below in example 18.
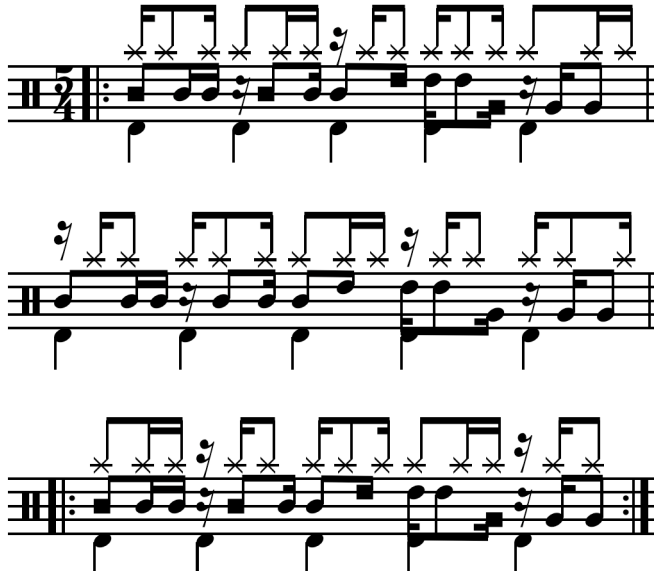
You may also notice that the cymbal is playing a 4 over 3 (4:3) to the bass drum. That is to say, four dotted 8th notes set to 3 quarter notes.

Ex. 18
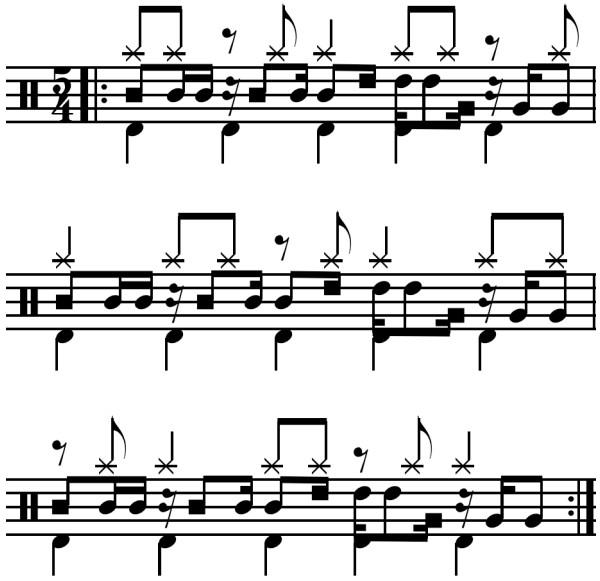


Example 19 takes the previous cymbal pattern and increases stroke density. Instead of playing the cymbal as “x – – x – –” we now find the phrase “x x – x x – ”, essentially doubling the previous density.

Ex. 19



In example 20 the busy cymbal pattern of example 19 is now played in a half-time feel. This sparse phrase may increase psychological challenge due to the fact that the drum melody is significantly busier than the cymbal. This is “usually” the opposite of most drum phrases where the “ride” pattern is busier than drums.

Ex. 20



Conclusion

Groove, Grid and Cycle: three unique perspectives, attitudes and awareness of phrase structure. The word “groove” is familiar to every person on the planet. It has found its way into the lexicon of pop culture, describing how one feels and interacts with the world: “my groove is off” / “that’s groovy” / “get your groove on”. In music, extended and unchanging grooves can be transformative, causing people to go into trance-like states of ecstasy and euphoria. “Groove” is as ubiquitous a word as “rhythm.”

“Expanding the grid” does not result solely from “expanding a groove.” In our sogo examples we extended a short phrase to rewire our neural network of time and space awareness. Psychology and philosophy are important tools for any artist in any medium. In lectures, I talk about ”self-archeology.” This is the act of exploring one’s self through definable experiences and influences of past history: teachers, music heroes, mentors, etc. True *self-archeology* goes beyond the traceable events in our CV of life. “Expand the grid” in your conscious and subconscious world and it expands in your playing. It also expands in your composing as you visualize and organize time from the ground up.

Rhythm cycles abound in all forms of music, from repeating patterns and grooves, into common forms such as a 12-bar blues, to immense time cycles in slow 12-beat Ektal.

What does this all mean in terms of our music making and performance practice? Simply put: ideas equal freedom. With greater organization and

depth comes greater freedom to break free from the confines of structure. It allows one to experience music as both a player and observer. Students will not sit to practice and say to themselves: “Okay, time to play some expanded grid rock grooves.” These higher aesthetical philosophies are not something that you should attempt in such a concrete and rigid state of mind. It is something that you will experience and observe in your imagination. Expanded grid and cyclic awareness occurs by not by forcing the point to the surface. It occurs by relaxing the mind and body with the possibility becoming probability.