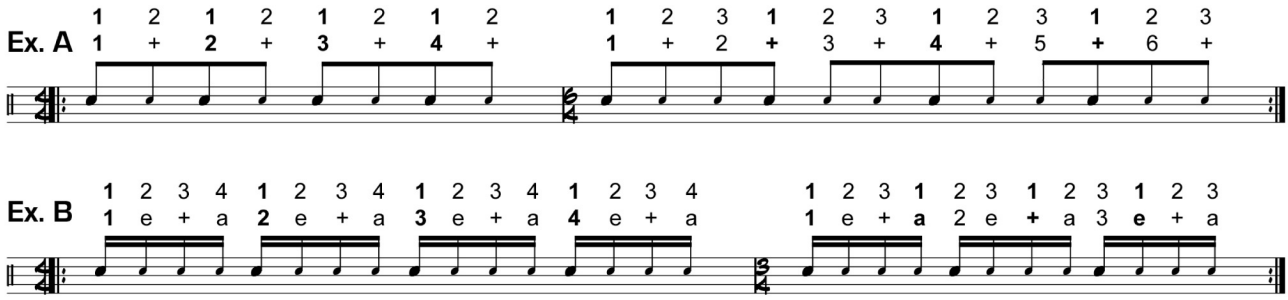
# Mad, Mad Modulation

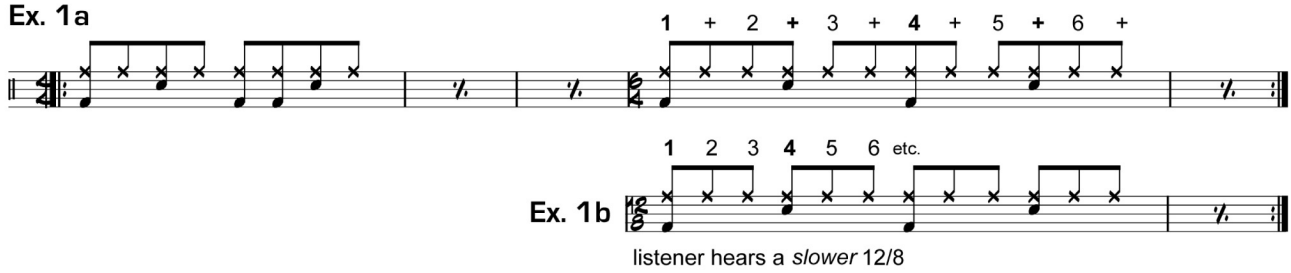
by John Kerr

Rhythm modulation happens *when* a change in the meter or emphasis occurs *where* the old and new meters share a common pulse or subdivision. This is an effective concept because the transition often feels like the tempo suddenly shifted faster or slower. Are things really slowing down or speeding up? In this article, I want to discuss what happens in these metric transitions and the effect it has when the drum part modulates and the music itself does *not* change - creating *rhythmic tension*.

To better understand modulation, determine the common pulse or subdivision between the two meters. Let's begin with with 2 metric changes. In **Ex. A**, accent every two 8th notes in 4/4 to accenting every three in 6/4 and in **Ex. B**, accent every four 16th notes to accenting every three in 3/4. In both examples, the rate of the pulse/subdivision does not change as you transition to a new meter, only the *emphasis*. Whenever you place a consistent emphasis of threes we tend to hear triplets when they are not necessarily so, hence why we can use this illusion to deceive the listener (and perhaps fellow musicians who we feel are not paying attention!?).

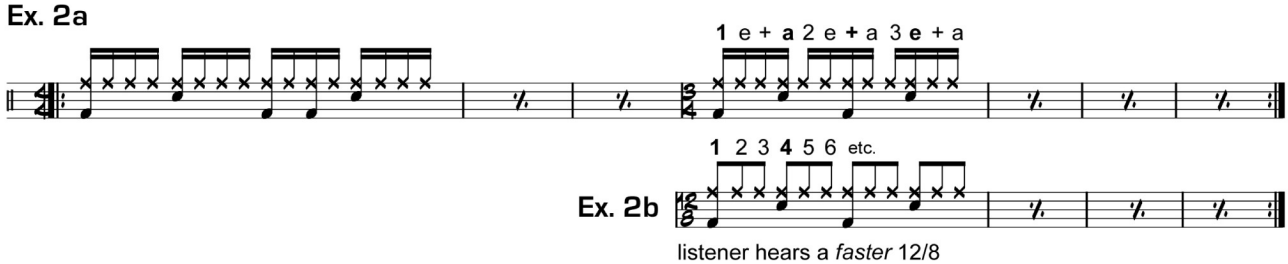



Now let's apply concept this to some basic grooves. In **Ex. 1a** with the 8th note pulse staying the same, you transition from 4/4 to the new 6/4 meter and you change the bass/snare emphasis to every third 8th note and instead of 6/4, the listener will likely hear **Ex. 1b**, a slower, temporarily "modulated" 12/8:




listener hears a *slower* 12/8

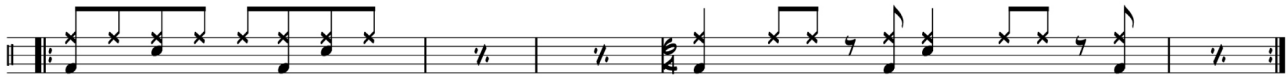
In **Ex. 2a** With the 16th note pulse staying the same you transition from 4/4 to the new 3/4 meter, but you change the emphasis to every *third* 16th note. In this case, the listener likely will hear it as a faster, modulated 12/8 as shown in **Ex. 2b**:



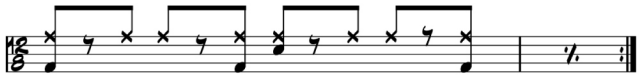

listener hears a *faster* 12/8

Let's take the *rhythmic tension* up a notch and put a bubble of space within the cymbal pulse to really pull at your ears. In **Ex. 3a-b** we subtract a hi-hat note in the middle of every grouping of three notes of the temporary modulation measures which basically crates a "fake shuffle" (see my article on ***The Sideways Shuffle Rhythm***!). The result creates the illusion of a slower tempo shuffle. In **Ex. 4**, we go *from* a shuffle and create a new, slower meter by maintaining the exact cymbal pattern but re-spacing the bass/snare.

**Ex. 3a**

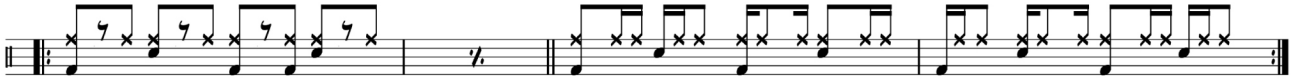


**Ex. 3b**

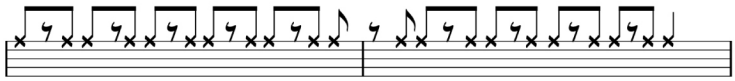


listener hears a shuffle at a slower tempo!

**Ex. 4**



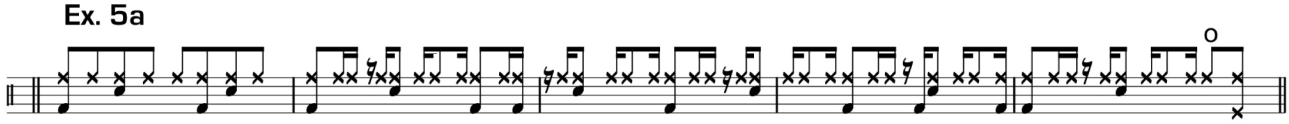
cymbal rhythm stays the same but the new meter is *slower*



Also try these against a click or any song in 4/4. Remember the music will stay in 4/4, but ***you*** will not!

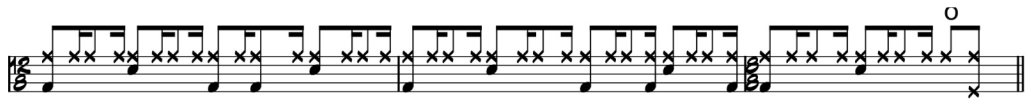
Now let's discuss some "real-world" applications citing the brilliance of drummers Gavin Harrison (Porcupine Tree) and Danny Carey (Tool). I want to reiterate that between any modulated meter transition, you want to find a common pulse or subdivision between them. First, let's look at Gavin Harrison's work with Mick Karn on a tune called '*Plaster the Magic Tongue*' from the *Tooth Mother* cd (1995). At 5:23 you can hear Gavin go from 4/4 into a half-time shuffle in a modulated 12/8 feel [similar to **Ex. 3a** but with a 16th note subdivision].

**Ex. 5a**



Gavin Harrison (*Plaster the Magic Tongue* by Mick Karn)

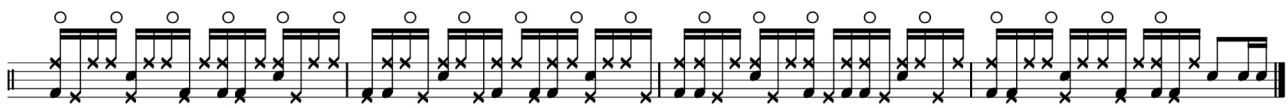
**Ex. 5b**



listener hears a half-time shuffle

Last, **Ex. 6** is an example of rhythmic tension coming from *within* the drum part is Danny Carey's work on Tool's '*Eulogy*' from the cd *Ænima* (1996). At the 6:36 Danny uses a hi-hat open to emphsize a dotted 8th note spacing over a "sideways shuffle rhythm" in 3/16 over a 4/4 bass/snare groove which gives the impression of two meters fighting for dominance!

**Ex. 6**



Danny Carey (*Eulogy* by Tool)

I hope helps you understand modulation enough to start to working on your own ideas and find it a little easier to listen to bands like Tool, Porcupine Tree, Meshugga or King Crimson to name a few. Good luck!