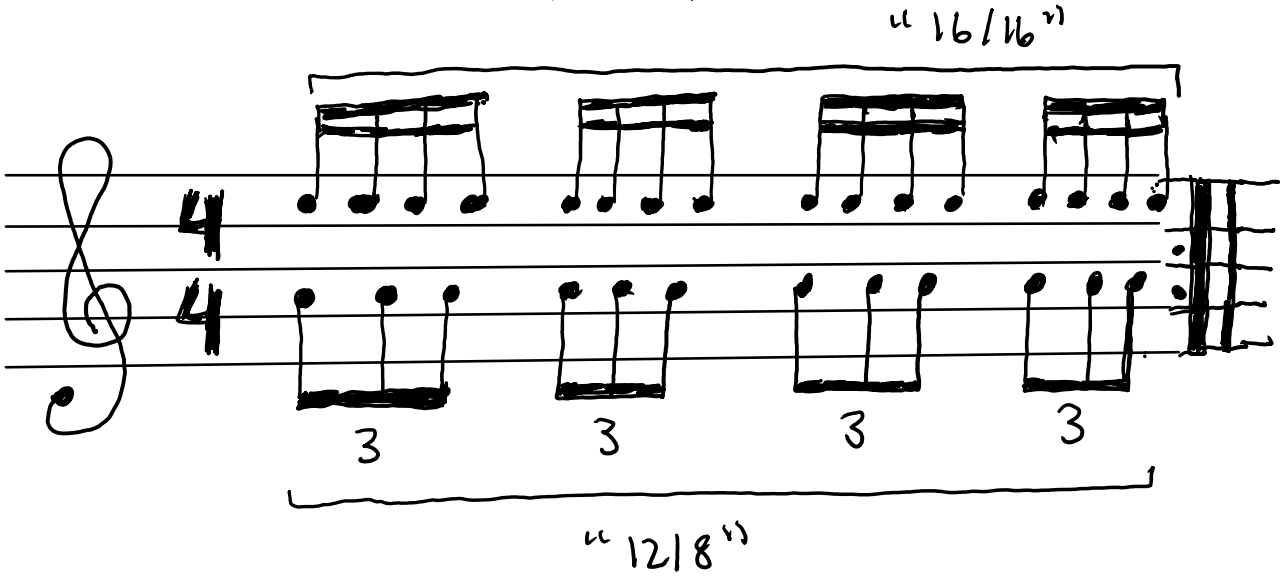
Polyrhythms

Thursday, December 19, 2019 5:53 AM

- A polyrhythm is the combination of 2 or more metered rhythms (eg. 4/4 over 3/4)
- We can have several layers of metered rhythms
- Polyrhythms add rhythmic complexity and variety
- Example: 4 over 3, aka 4 against 3, aka 4:3 polyrhythm:



In this example, we have a rhythm in "16/16" (16 sixteenth notes per measure) over a rhythm in "12/8" (12 eighth notes per measure - this is actually 4/4 due to the triplet groupings.

But the essential thing to note is that

for each group of sixteenth notes and for each group of eighth note triplets, we have a repeated pattern when these two rhythmic lines are combined.

The combined effect is a rhythm with 4 rhythmic subdivisions played every 3 rhythmic subdivisions. The actual subdivisions don't matter, this is a unitless ratio.

The way the note heads are aligned in this example actually indicate the way the rhythm is actually played (the relative timing of the sub-beats in each line).

- How do we actually play a polyrhythm?
  - Apply the <u>lowest common multiple method (LCM)</u>
  - Using our 4:3 example:

    The LCM of 4 and 3 is $4 \times 3 = 12$. So we create a grid

with 12 columns and 2 rows. Each row will be a different instrument (in this case, the instruments could be our right and left hands). We could also merge these 2 rows into one to play the polyrhythm on a single instrument.

	1	2	3	4	5	6	7	8	9	10	11	12
R	X			X			X			X		
H	X				X				X			

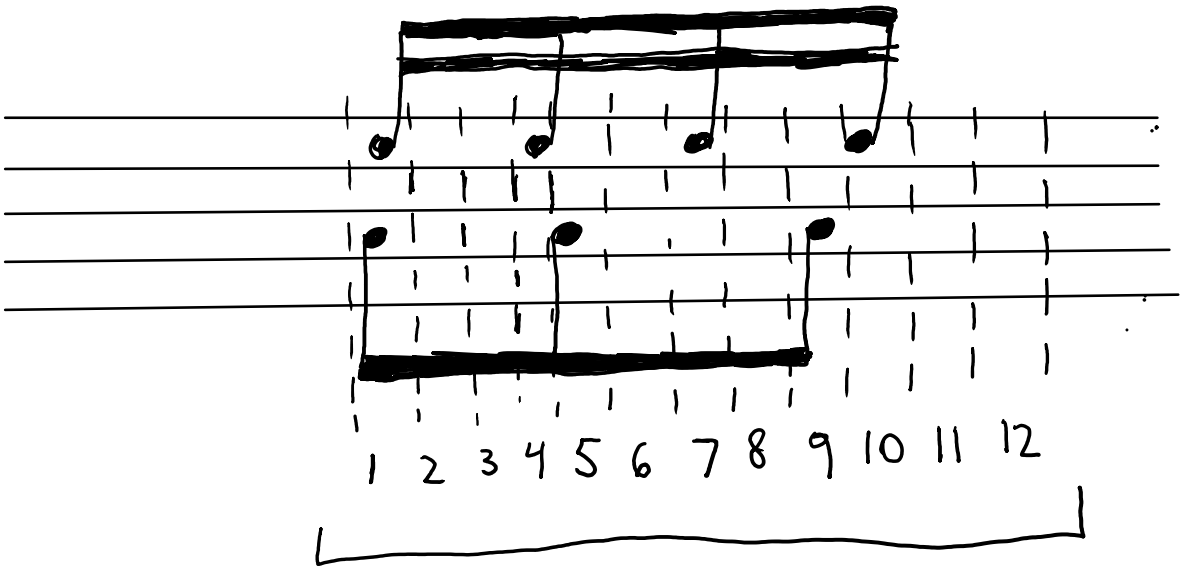
- In this grid, the top row corresponds to the top rhythmic line (4 groups of sixteenth notes) and the bottom row corresponds to the bottom rhythmic line (4 groups of eighth note triplets). This grid models how a single repetition of the polyrhythm is played (4 repetitions would give us a complete measure in our

example).

- To construct the grid, we divide the LCM by our top line meter, 12/4 = 3, which tells us that we play one sub-beat every 3 sub-divisions of the LCM. For the bottom line, we play 1 sub-beat every 12/3 = 4 sub-divisions.
- Each subdivision is equally spaced.
- To play this rhythm from the grid, we mentally subdivide each beat into 12 sub-beats and play the sub-beats according to the grid. Try doing this with your left and right hands.

• For a closer look at how the grid translates to the

notated score, consider a single beat:



1 beat ≡ 1 grid repetition

- The LCM method can be applied to any polyrhythm with any number of layers (eg. 5:4, 5:4:3, etc.)