Permutation Prowess

by Mark Shelton

Take a look at this sequence of right and left hand movements and tap it on any solid surface:

R L R L R L R L

Try this:

R L R R L R L L

(Yep, that was a couple of paradiddles.)

And one more:

R L R R L R R L

All the sequences above are permutations. The website www.mathisfun.com provides a simple definition: “A permutation is an ordered combination.” Percussionists play “ordered combinations” of movements of our limbs using sticks, pedals, brushes, mallets, and bare hands. Whether you occupy the drum set throne or stand behind a percussion set-up, permutations are a part of your essential skill set. Let's examine how permutations are applied in percussion along with my recommendations for expanding your permutation skills.

Technique

One of the most basic permutations is simply alternating the hands. Eventually, you encounter situations that require different sequences so that musical passages can be executed efficiently. Moving between two timpani, making a wide melodic leap on the xylophone, or playing a drum fill across three toms can require methods beyond alternating strokes. Facility with a variety of permutations is valuable when faced with technical challenges.
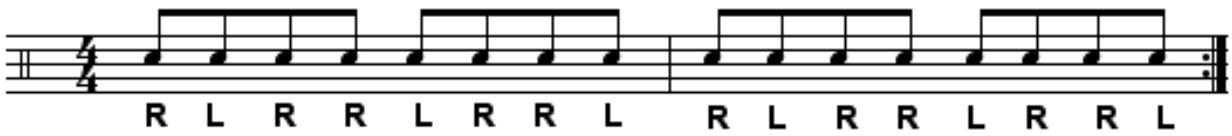
Phrasing

Permutations are an important tool for musical expression. Try as we might, we can never make alternated strokes sound exactly the same as those delivered by one hand (or foot). We can use these subtle differences as a means to give nuance to our playing. Go back to our earlier examples and play each one with a steady eighth-note rhythm. Listen how the various permutations give each example a slightly different flavor. Experiment with permutations to add different shadings to your licks.

Groove Generator
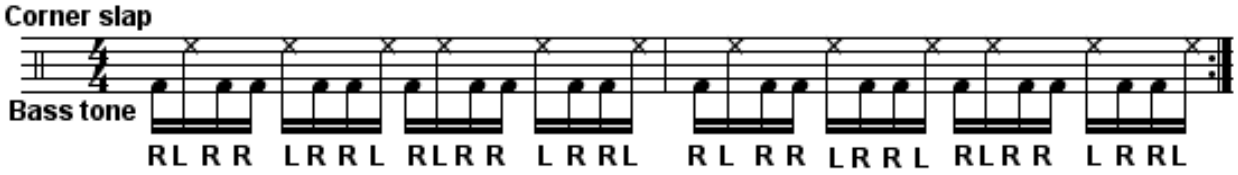
Experimenting with permutations can stimulate creativity. The following exercises and examples demonstrate how grooves can be composed by the application of various permutations.

Play this rhythm using the permutation below it:

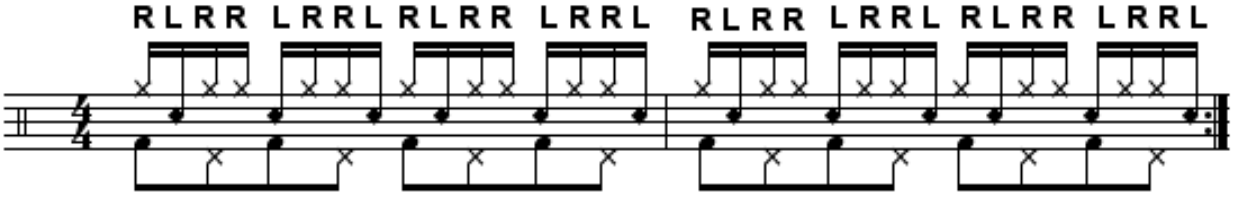


When you are confident with the pattern at a moderate tempo, play it with each hand (or stick) on a different timbre (For example: R on cowbell, L on conga). Keep looping the pattern and listen to the groove that grows from the simple pattern.
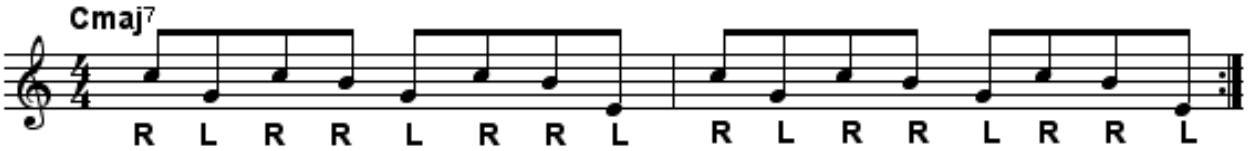
Transfer the rhythm and permutation onto cajon:
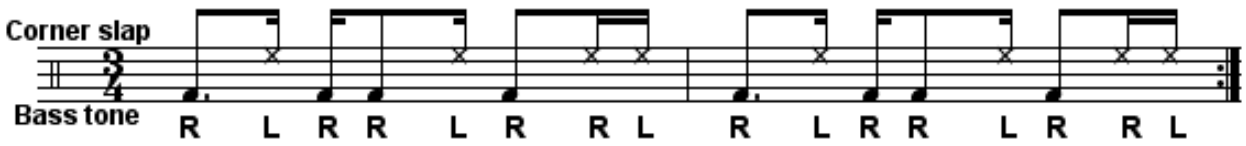


Play the same hand sequence on drum set along with a simple alternating foot permutation:



Use it to spin out a melodic or a harmonic accompaniment idea:



The same permutation can be applied to a different rhythm:



Expand Your Permutation Palette

With the variety of time signatures, rhythms, and right-left permutations, the possibilities seem endless. Where does a percussionist dive into the permutation pool for further study? Instead of trying to compose your own practice materials, I suggest investing in some books that provide a systematic approach to this topic.

• For three quarters of a century, *Stick Control* by George L. Stone has been a source of permutation practice material. Many of the exercises can be applied beyond "sticks." Practice the sequences with your feet to improve your pedal skills on the kit. Drum set artist and educator Ed Soph suggests practicing exercises in *Stick Control* by sweeping the rights and lefts with brushes. The opening section of the book can even be adapted for developing split finger technique on a hand drum.

• Written in the early sixties by Marv Dahlgren and Elliot Fine, *Four Way Coordination* is a classic drum set method book that will ramp up your ability to integrate permutations across all of your limbs.

CLOSING TIP: You can practice many basic hand permutations without an instrument. Write several sequences on a card and keep it handy so that you can drop into woodshedding mode during a stop at the drive thru or while waiting on hold for customer service. Learn a sticking order by the time you pick up your burger order.

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