

Should You Be Using a Metronome When You Do Mental Practice?

Description

Pianist Leon Fleisher has said that between melody, harmony, and rhythm, [rhythm is by far the most important](#).

As the saying goes, timing is everything. And there is indeed something really compelling about how great performers have a way of stretching and compressing time, of playing with great freedom (yet in perfect time), and doing some incredibly nuanced things with the placement of notes – as Yo-Yo Ma elicits in Fleisher's playing [here](#), and as Fleisher and Pamela Frank describe [here](#) and [here](#).

Of course, timing, like any skill, needs to be practiced and cultivated.

And while metronomic precision is not at all the same thing as good rhythm, [practicing with a metronome](#) can help make sure we're not cheating or fluctuating randomly in erratic ways.

But...have you ever used a metronome when doing *mental* practice?

I mean, it's pretty typical to focus on one's concept of *sound* when visualizing. Feeling the *physical* ease and movements of our fingers and bodies. And perhaps even imagining what we'll see when performing.

But have you ever wondered about the accuracy of your sense of rhythm during mental practice? When you mentally rehearse a tricky passage in your mind, how close is the timing of the imagined version to what it would be if you played it on your instrument for real?

Like, if it takes you 48 seconds to play the Schumann Scherzo in real life, does the visualized version also take 48 seconds (give or take a second or two)? Or is your imagined version more like 42 seconds? Or 53?

Because that would suggest that the version in your head could be rushing. Dragging. Or both.

Ok. Point taken. But how big a deal is rhythmic accuracy in mental practice?

Imagery speed vs. physical speed

There's actually not a lot of research looking at the relationship between imagery speed and real-world performance speed.

So a [team of researchers](#) recruited 21 national-level judo black belts, to see how speeding up or slowing down imagery of an already well-learned series of moves might affect the real-time performance of these movements.

The athletes were told nothing about the purpose of the study; just that they would be supplementing their training with short imagery sessions, in which they would perform and mentally practice a sequence of three moves that involve throwing one's opponent over one's hip (the [the Koshi-waza from Nage-no-kata](#)).

Pretest

To determine the regular pace at which the athletes typically execute these movements, everyone started out with a pre-test, where the athletes were asked to perform each series of moves 3 times, just as they would in competition or training. On average, it took each athlete about 40.5 seconds to go through the series.

Then they were asked to perform each series twice more – but faster (37.3 seconds). And then, another two times – but slower (42.4 seconds).

Training

The athletes were then divided into three training groups. One group – the **faster** group – would visualize performing these moves *faster* than they did in the pre-test. A second group – the **slower** group – would mentally rehearse executing these techniques more slowly than normal. And a third group – the **control** group – would do no imagery practice, but simply stretch for the same amount of time as the other groups' imagery practice.

Three times a week, for 4 weeks, the athletes engaged in mental imagery sessions consisting of 6 mental repetitions of the 3 throws. They were instructed to visualize both the physical and visual aspects of the skill, and to make sure they really were speeding up or slowing down the images in their mind, they were asked to start a stopwatch when they began the visualization, and stop it when they were finished. Here's the exact script they were given:

Attempt to imagine yourself doing the second series of the Nage No Kata (Uki-Goshi, Harai-Goshi, and Tsuru-Komi-Goshi) with your eyes closed by visualizing yourself standing in front of your partner, holding the kimono with a right kumikata in a normal posture. Try to see and feel only what you would do if you actually executed the kata. Make sure to see your hand on your partner's kimono, and try to execute the entire kata at the requested speed. You will execute the Nage No Kata, just as you did in the pretest when you made actual movements. Just imagine yourself doing the kata at a faster speed (or "slower speed," in the slower group's script), keeping in mind your trajectories and displacements. Only start the timer when you start feeling and seeing the first movement. Reposition yourself again and do the same thing on the left side at a slower (faster) speed. Do the same for the next two techniques first on the

right and then on the left. As soon as you finish the kata, stop the timer and open your eyes.

At every third imagery session, the athletes were asked to perform the techniques on a partner for real, just as they would in a competition or training session, so researchers could time the duration of their movements and see if the visualization practice was having any impact.

Finally, after completing all of their imagery sessions, the athletes did a post-test, where they once again performed the movements at a normal training or competition speed, just like at the pre-test.

So...did anything change?

Results

The short answer, as you can see from the chart below, is yes.

From: Louis, M., Guillot, A., Maton, S., Doyon, J., & Collet, C. (2008). Effect of Imagined Movement Speed on Subsequent Motor Performance. *Journal of Motor Behavior*, 40(2), 117-132.

Speeding up the movements in their *mental* practice, led to *faster physical performance* of these movements. Likewise, visualizing slower performance of these techniques, led to slower physical execution of these moves.

In the pre-test, for instance, the faster group performed the first technique in 7.63 seconds. At the post-test, it was 7.25 seconds. Admittedly, this first decrease in time was not statistically significant. But the second technique dropped from 15.38 seconds to **12.88** seconds. And the third technique went from 16.13 seconds to **13.88** seconds. The latter of which were both statistically significant.

Meanwhile, the slower group increased from 8.25 seconds to 8.63 seconds for the first technique (also not a significant change). And increased from 15.88 seconds to **19.63** for the second technique. And 16.63 seconds to **20.63** seconds for the third technique.

The control group's movement times, on the other hand, stayed more or less the same for each of the techniques¹.

So what does this all mean?

Takeaways

The study suggests that the speed of our movements in mental practice can affect the speed at which we perform these skills in actual performance. And that the speed of our physical movements could “drift” in the direction of whatever we visualize in our minds – without necessarily being aware of it.

Meaning, if we have a tendency to rush or drag in our mental practice, this could seep into our physical performance too.

1. Umm...so does that mean we ought to fire up the metronome when we're doing mental practice?

It would have never occurred to me to use a metronome during mental practice. But, if you're preparing excerpts for an orchestral audition, in which rhythm is going to be particularly closely scrutinized, I could see how that might be helpful on occasion. (Has anyone experimented with this before? I'd be curious to hear your experience if you have.)

2. Does this mean slow mental practice is bad?

I don't think the research is saying that there isn't value to slow mental practice. It can be useful to slow things down and problem-solve tricky technical details in your mental practice, just as you would in your physical practice. It's just that as you get closer to a performance or audition, you probably want to make sure that your mental rehearsal is a pretty close replica of exactly how you intend to perform.

3. Does this mean that you could learn to play a passage faster, simply by visualizing that passage at a faster tempo than you can currently play it at?

You know, that's the first place my mind went when I read this study. I don't think the study necessarily answers this question, but I'm intrigued by the idea. Like, what would happen if you set a metronome at a tempo a few clicks faster than what you can currently manage, and spent a week or so visualizing yourself playing a tricky passage at that tempo. Would this help you get the passage up to that tempo?

I honestly have no idea – but if you try it, please do report back in the comments and let us know how it goes!

References

Louis, M., Guillot, A., Maton, S., Doyon, J., & Collet, C. (2008). Effect of Imagined Movement Speed on Subsequent Motor Performance. *Journal of Motor Behavior*, 40(2), 117-132.

Date Created

November 2018