

CHAPTER 15: PRACTICE REVISITED, AND SOME THOUGHTS ON “MUSCLE MEMORY”

HUMILITY INSPIRES PRACTICE

Since you have reached this point in the book, it's clear that Irish music has touched you deeply. I hope that your respect for its traditions inspires humility and the desire to join the tradition in the best ways that you can. That means “doing your homework,” attentively listening to the older players as well as the new, and honing your own skills so you can play in a conscious and ever-improving way.

If you ever feel that your practice is becoming stale, boring, or unproductive, it is a good time to review the ideas on practice given in Chapter 4.

BUILD YOUR MEMORY BANK OF IDEAL SOUNDS

You can memorize the sounds of the well-played cut, strike, long roll, etc., and store these sounds in a bank of ideal sounds. As you work on training your body to learn the needed skills, continually compare the sounds you are making to the ideal sounds in your memory and imagination. Without self-criticism or judgment, notice well the differences between the reality and the ideal. Those differences are like gold. They show you where to direct your efforts. With patience and self-compassion, keep striving to come closer to your ideals. Little by little you will get there.

REMEMBER: SLOW PRACTICE WILL GET YOU THERE SOONER

We all tend to become impatient with making slow progress. But there is no question that playing too fast too soon significantly impedes us, greatly increasing the amount of time it will take for us to become fine, fully musical players.

It is thrilling to listen to fine, fast playing, and, naturally, we want to be able to play that way ourselves. Many of us, forgetting to listen well to ourselves, go ahead and play faster than we are ready to, do so poorly, and unknowingly reinforce the habits of poor playing. Other musicians will notice you doing this, but most likely they will be reluctant to tell you.

What is the point of playing poorly at a fast pace? It is a short-sighted and self-defeating strategy. Here is a case where the fable of the tortoise and the hare is very apt.

Having reached this point in the book, you know well that Irish music is vastly more than a simple succession of notes. What you see in tune books are simply frozen skeletons of snapshots of settings of tunes, some a bit more fleshed out than others. The nuances that breathe life into the music cannot be written down and cannot be learned in a hurry. When you play too fast too soon, you miss out on them. Why race along flinging frozen skeletons to and fro when you could be sipping and savoring nectar at the banquet table? Playing slowly and well is delicious, and it is a pre-requisite to playing fast and well. I think you will find that the musicians whose fast playing you admire will agree.

For many of us, our metronome is the friend we love to hate. It provides a rigid time reference, and that can be extremely revealing. For example, you want to gain control over your cuts so you can place them wherever you want them. It is easy to fool yourself into thinking that you have gained such control when perhaps you really haven't. Try placing cuts where the metronome tells you to place them, right on a steady beat. When you *externalize* the definition of the beat to a machine, you come to see how your own internal sense of the beat can speed up or fluctuate. It's difficult to maintain a steady beat at an unusually slow speed, especially when you are giving most of your attention to working on a challenging new skill. We want to speed up, even when we are not ready to. Of course we don't want to play like machines, but machines can help us gain insight into how to play better as humans.

THE PHYSIOLOGY OF “MUSCLE MEMORY”

Why should it be that our muscles take longer to learn things than our minds do?

The cut, for instance, is not hard to grasp with the intellect, especially once you have heard it played well. Yet it can take a very long time to gain the needed fine muscle skills.

Research in biology, anatomy, and neurology has begun to address this question. It is intriguing and reassuring to know that during that long learning period you are literally building new nerve pathways that are very persistent and reliable. What follows is a somewhat technical explanation, courtesy of my friend Lawrence Washington, a musician, instrument builder, and molecular biologist.

As we first start learning a new group of movements, such as the fingering motions used to execute a G long roll, we have to think consciously about each component of the group and command the muscles to move. The part of the brain responsible for conscious thought (the cerebral cortex) sends impulses through the muscle-control part of the brain (the cerebellum) and onward to the finger muscles. Since there are so many different, very precise muscle movements in a long roll, its execution is at first slow and tedious, requiring great concentration. The thought process may go something like this: “Do a G long roll: (1) place T1, T2, T3 on their holes, (2) blow, (3) lift T2, (4) replace quickly, (5) raise B1 high, (6) bring B1 down sharply...” and so on, all the while keeping the proper timing, breathing, and a raft of other elements in mind. There is so much to think about that it is no wonder we can feel overwhelmed and frustrated.

But there is comfort to be found in the biology of learning. When we repeat a complex set of muscle motions, specific patterns of nerve pathways are assigned to repeat them. This is a physical process, an actual structural change at the microscopic level of our neurons. Gradually the muscle commands, which originate from the thinking part of the brain, the cerebral cortex, are taken over directly by the muscle-control centers of the cerebellum, which previously had only mediated them. All that remains at the conscious level is the initiating command: “Do a G roll.” With that, the cerebellum takes over and commands all the individual movements, which we had to think about one by one when we were first learning. It is as though we have gradually built a very specific machine and now only have to flip a switch for that machine to do its job.

Naturally, once we no longer have to think about each movement of the long roll it becomes possible to perform it quickly and with fluidity. It literally becomes “second nature.” In fact, it may be that the movement of a proper cut, for example, is so very quick that most people cannot do it until it becomes established in the cerebellum and we no longer have to “think” about it.

The more times the pattern of movements is repeated, the more strongly the neuronal pattern is established. With the right microscope you would be able to see an increase in the density of the synapses and dendrite branches. The nerve connections become physically stronger, as a path through the woods becomes better defined the more times a family of deer walks along it.

One implication of this fact is that we should take care to practice and repeat only what we want our muscles to learn. If we are early with the timing of a strike as we practice it, and remain inattentive to that fact, our muscles will become expert at playing strikes early.

Of course, in the early stages of learning the cut, for instance, we cannot do them quickly enough. By necessity we practice them “too slow,” making them as crisp as we can at that time. But if we remember the sound of the ideal cut, and constantly strive for it in our playing, we continually and gradually revise the pattern of nerve pathways that controls how we execute the cut. Once we finally learn to perform cuts well, the new, improved nerve pathways are well established.

When we keep our ideal sounds well in mind, we establish a feedback loop that continually compares the sensations with the ideal. For instance, when the cerebral cortex tells the cerebellum to execute a long roll, you listen carefully to how it sounds, “think” about it, compare it to the ideal roll, and instruct the cerebellum how to modify the roll toward the ideal. You see how very important it is to listen well to ourselves, and to our models.

Fortunately for the beginner, it does not matter that we execute movement patterns slowly as we learn them. After the neuronal pathways have established their circuits, we can go as fast as our muscles can move. The family of deer walking many times the same way through the woods clear a nice trace. Later they can run as fast as they like down the smooth trail, gracefully as a perfectly timed roll. And the established neural pathway is amazingly persistent. Once made, the additional synapses and increased density of nerve branches stay. We may easily forget how to describe the details of a roll, but the nerves in our brain and fingers have made very strong connections that can be activated anytime we “flip the switch.”