

Backwards Memorization: A Lively Debate

by Tom Poore

Internet chat groups are often forums for verbal bar fights that offer more bile than light. But occasionally an interesting subject comes up, and something of merit ensues. In 2004, I participated in a lively internet debate over the merits of memorizing a piece from the end to the beginning. (In this discussion, we referred to this as “back to front.”) Concert guitarist David Russell has long advocated it. I argued that, for all my respect toward Mr. Russell, this wasn’t a particularly useful idea. What follows is a summary of the debate. Italicized entries are comments directed at my arguments—unitalicized entries are my replies. The value of this debate is that it sheds some light on how one might go about evaluating an idea. After all, one’s eventual skill as a musician depends greatly on the ideas one applies in practice. Bad ideas take us further from our goal—good ideas take us closer.

“Back to front” is difficult for people who need rules to follow, because it requires you to think.

The problem with “back to front” is precisely that it doesn’t encourage thinking. Rather, it has the air of a solution that requires mere application for success. Consider an alternative idea: “put practice where it’s needed most.” Notice this demands that I think about what I’m doing: what are the hardest parts to play? what are the hardest parts to memorize? where do I tend to be most nervous during a performance?

Notice also that the questions raised by “put practice where it’s needed most” are automatically tailored to the person asking them. What works for David Russell or any other guitarist isn’t the issue. For example, “back to front” presupposes that everyone becomes more nervous toward the end of the piece. This doesn’t describe my experience. I tend to be nervous either at the beginning of a piece, or at whatever bit I’m not confident with. In fact, I tend to gain confidence as I approach the end of a piece. “Back to front” takes a solution apt for one person and shoehorns it onto others for whom it may not be apt.

Framing pedagogy in black and white can damage a student’s ability to have an open mind about what works and what doesn’t. This is bad pedagogy. Good pedagogy is being able to find the good parts in the pedagogy of others.

It’s also bad pedagogy to imply that all things are equal. An open mind doesn’t require us to accept everything that washes up on the beach. If an idea has value, it should withstand critical scrutiny. Indeed, critical scrutiny should make its value all the more apparent.

No one has presented “back to front” as a theoretical absolute. If anybody shares their process in whatever words they choose, we might learn more if we try not to frame ideas in black and white.

If you wish to attack theoretical absolutes, “back to front” is a good target. Consider the answers it gives to differing circumstances. Suppose, for example, you’re learning the Gavotte en Rondeau from BWV 1006a. The form of this piece is A(A)BACADAEA—thus the end recurs almost note for note throughout the piece. Using “back to front” you’ll begin memorizing from the most repetitious part of the piece. Using “put practice where it’s needed most” you’ll begin from whatever gives you the most trouble, regardless of where it is. Thus, “put practice where it’s needed most” gives different answers to different music, whereas “back to front” imposes the same answer on all music.

Does anyone doubt this? Well, let’s try sprinkling some flexibility on “back to front” and see what happens. Amend it thus: back to front, but if there’s a particularly hard bit at the halfway point, then start there. But wait, now it’s no longer back to front. Let’s try again: back to front, but only if the piece is especially tricky at the end. But once again, now it’s no longer back to front. The problem with “back to front” is precisely its inflexibility. You’re looking for slack where there’s none to give. “Back to front” is black and white—if you begin with anything but the last measures, then you’re no longer doing it.

As I see it, David Russell separates learning a piece and memorizing a piece. “Back to front” is for memorizing a piece.

A pernicious fallacy is that learning a piece and memorizing it are two different things. They’re not. Memorization begins from the moment you begin working on a piece, whether you’re aware of it or not. From the first minute you begin working on a piece, you’re also beginning to memorize it.

I agree, but only in a general way. For instance, some practice doesn’t focus on memorization, even if one ends up memorizing as a result. The intent isn’t to memorize.

Intent is irrelevant. Whatever you're doing at whatever point in the learning process—playing at first sight, figuring out a tricky rhythm, parsing the form, analyzing the harmony, trying out fingerings—you're memorizing the piece. In essence, all practice is memorization. Even when you're doing a purely "technical" exercise, what are you really trying to do? You're trying to ingrain within yourself good movements, good sound, and good rhythm. In short, you want your body and mind to "memorize" these attributes.

Learning and memorization are the same thing. To illustrate this, consider the following hypothetical: You're learning a piece, but not memorizing it. Everything you do vanishes from your memory within seconds. If this is true, then what have you learned?

Depends on whether or not you equate learning with understanding. You obviously don't.

Learning without understanding is meaningless. Why do you believe I separate them?

If you do hold that understanding is an essential part of learning, then you cannot logically say that learning and memorization are the same thing, since understanding imparts to learning a different characteristic than memorization without understanding.

Your contention that one can memorize without understanding is true, but doesn't refute my assertion that learning and memorization are the same thing. One can learn or memorize badly. Wrong notes, unmusical fingering, ignorance of historical context—all these misunderstandings and more can be securely learned or memorized. Learning or memorization is like fire: you can warm your home with it, or you can destroy your home with it.

Further, you're not answering my hypothetical. You're learning the piece, but not memorizing it. Everything you do vanishes from your memory within seconds. So how could you have learned any of the things you described above without remembering them? Certainly one can remember without understanding, but no one can understand without remembering.

Let's step back for a moment. We're coming at this question from different perspectives. Of course learning and memorization aren't the same thing—for starters, they're spelled differently. Kidding aside, I'm not trying to write a definition suitable for Webster's. Rather, I'm framing my definition in the context of a musician learning to play a piece. In this context, learning and memorization are the same thing.

Indeed, I'm surprised anyone disagrees. Experienced teachers—and concert artists who are serious about teaching—constantly try to get their students to understand this. They beg, plead, cajole, browbeat, or threaten: from the very beginning of learning a piece, get it right. Don't hack through the piece. Get the fingering right. Get the rhythm right. Get the tone right. Whatever you're doing, get it right. Why? Because everything you do becomes part of your memorization of the piece. If you're hacking through something, your mind and body don't step back and say "we'll ignore this, because he's not doing it right." Rather, they absorb whatever you do, whatever you think, whatever you feel. If you hack, they absorb hacking. If you're confused, they absorb confusion. If you're anxious, they absorb anxiety.

Frankly, I don't care that learning = memorization fails the Webster's test. The only circumstance I'm concerned with is the musician in his or her practice room. In this circumstance, learning = memorization is gold.

There are some pieces I can play from memory—meaning I don't need the score to play the music. There are even many more pieces that I have learned—with the score in front of me I can give a pretty accurate rendering, but with these particular pieces, for whatever reason, I've never taken the extra step of committing of them to memory, and therefore I can't play these pieces without the score. To make it clear, because of the lack of that extra step on my part towards memorization, I can't play these learned pieces from memory. And that is that.

You're treating memorization as an all-or-nothing proposition. You can't play the piece entirely from memory, ergo the piece isn't memorized. This makes no sense. Consider the following: You start your lawnmower and mow half the yard. You then shut off the lawnmower, put it away, and declare "I have not mowed the yard." This, of course, is false. You haven't mowed all of the yard, but you've certainly mowed some of it.

You say you haven't memorized the piece because you can't play it without the score. But you've certainly memorized something, otherwise you would start from zero every time you play the piece. Consider all the things you know without the score in front of you: the key, the time signature, the form, the repeat scheme (if any), the composer, the historical context, the general emotional content, and more. Probably there are passages you can play from memory. It's telling that you apply this all-or-nothing idea to memorization, but not to learning. You're creating an artificial dichotomy that has no basis in reality.

Whether you can play a piece in full or maybe only three measures of it, you haven't memorized that piece or those three measures if you can't play it without the score. Therefore, learning = memorization is a canard that obviously needs to be bolstered with continuous fine-tuning as to its actual meaning.

It's your position that requires absurd fine-tuning. In your view, memorization doesn't exist unless you can play the entire piece from memory. Apparently, you believe partially memorized is the same as no memorization at all. Do you apply this belief to the rest of your daily life? If you open a bottled drink and take a sip, do you then throw away the almost full bottle? After all, it's not completely full, so it must be empty.

The phrase "learning = memorization" is obviously clumsy and open to misinterpretation.

It's clumsy only to those who impose an artificial barrier between learning and memorization. How can you learn something you haven't memorized?

This learning = memorization controversy interests me, but we're drifting away from the original topic. I'll try to nudge things back on course. I'd like to see a more explicit defense of this memorization technique. So let's begin with a question: What problem does "back to front" solve?

Many pieces (and sections of pieces) are most intense at the end. Practicing from the back addresses in these cases focusses—efficiently—on the most difficult spots.

Many pieces do not. Consider an alternative idea: "put practice where it's needed most." This advice tailors its solutions to the piece at hand. "Back to front" imposes the same solution on all pieces. Those who defend "back to front" speak as though it exists in a vacuum. If you compare it to nothing, then it appears to have merit. But compare it to "put practice where it's needed most," and its merits vanish.

Concentration is another aspect. In a performance, one's concentration is obviously very high at the beginning of a piece or section, before you buzzed that note, or heard someone's cell phone go off, or got side-tracked by "how well things seem to be going!" In this respect, a practice or memorization method that focusses from back to front does seem a good idea.

That buzzed note or cell phone ring is just as likely to happen at the beginning or middle of the piece. Further, I've seen little evidence that students concentrate better at the beginning than at the end. The opposite is more often the case—students begin nervously, then focus better as they settle into the piece. Indeed, in hearing students, advanced players, and concert artists, I find that memory lapses are no more likely at the end of a piece than at the beginning or middle. "Back to front" assumes a premise that is, at best, questionable.

I don't think it is really so much a memory technique, but a remedial approach to practicing for students who tend to start on a piece at the beginning of it, learn the first page or so, then spend all their time playing that page or section over and over and over, instead of buckling down and working into new material.

Someone who does this has fundamental problems that "back to front" doesn't solve. It might be a symptom of any or all of the following:

- 1) He can't accurately evaluate what parts of the piece require more practice.
- 2) He has fundamental technical flaws that cause him to get stuck at whatever point he starts.
- 3) He has fundamental musicianship flaws that cause him to get stuck at whatever point he starts.
- 4) He's lazy, and prefers to work on parts he already knows rather than move on to new material.

None of these problems is solved, or even addressed, by "back to front."

The famous piano teacher Theodor Leschetizky recommended this memorization technique. So do countless other pianists.

Regarding this, I've done some homework. First, let's address the Leschetizky claim. The following is from "Theodor Leschetizky," by Annette Hullah, first published in 1906:

In the very first composition the pupil studies, he learns how to work in the new way, which is as follows: he takes the first bar, or phrase (according to the amount he can grasp and retain), and dissects it till every marking is clear to him. He decides how he will play it—with what fingering, touch, pedaling, accent, &c. He practices each detail as he comes to it. He puts all the parts together, learning it by heart as he goes, finishing one section, making it as perfect as he can in every respect, both technically and musically, before

he attempts the next. (pp. 43-44)

...and:

Every pupil must study in the way—bar by bar, slowly and deliberately engraving each point on his mind as on a map. “One page a day so learnt will give you a trunk-full of music for your repertoire at the end of the year,” says Leschetizky, “and, moreover, it will remain securely in your memory.” (p. 44)

No mention of “back to front.” Now for the countless pianists who are using “back to front.” I’ve surveyed four books featuring interviews with pianists: “Reflections from the Keyboard” by David Dubal, “Pianists on Playing” by Linda J. Noyle, “Great Pianists Speak for Themselves” by Elyse Mach, and “Great Pianists Speak” by Adele Marcus. Between these four books, 42 concert pianists are interviewed. In most cases they’re specifically asked about memorization. Not one ever mentions “back to front.”

If something doesn't work for you, by all means discard it. But to suggest others do the same—including highly accomplished figures who feel it works for them—is about the most sophomoric kind of pedagogy I can imagine.

This isn’t a question of what individual artists should or shouldn’t be allowed to do—they’re free to do whatever they want. If a particular concert artist believes that carrying a rabbit’s foot helps him perform better, that’s his business. But pedagogy shouldn’t be a grab bag of personal quirks. Rather, it should be a continuous and rigorous examination of what does or doesn’t have intrinsic merit. Obviously what the best concert artists do is valuable information. But this information should spur examination—not kill it.

Indeed, the more we look at what concert artists say or do, the more necessary this examination becomes. Consider the following assertions on the value of slow practice:

Alfred Brendel

What it all comes down to is that I learned that the music dictates the terms. It tells you what to do with fingering, pedaling, and hand movements. That’s why I do not believe in the intentional slowing up of the tempo in practice or in warm-up. If I slow down the musical process, the fingering may be wrong; the movements may be inadequate. On the other hand, to try to discover fingering by playing in slow motion a piece which goes rapidly is basically wrong. (“Great Pianists Speak for Themselves” by Elyse Mach, p. 27)

Claude Frank

There is absolutely no substitute for slow practice. Let me embellish this by saying that, ninety-nine times out of one hundred, this slow practice should be very musical. There are very few instances in which slow mechanical practice is beneficial. Musical slow practicing is the key. This kind of practicing is the best for everything. It’s best for technique, security, nerves, memory, and everything else. Most things which one knows slowly, one also knows well. (“Great Pianists Speak” by Adele Marcus, p. 51)

So here we have opposing beliefs by two major concert artists. In good pedagogy, do we merely offer students these opposed beliefs with no further comment? That’s an abdication of a teacher’s responsibility. We’re obliged to know the value of what we teach. Students aren’t paying us to shrug and say “whatever.”

Summing Up

Students don’t have unlimited practice time. The value of their practice is directly affected by the quality of the information they have. Bad information wastes time and effort—time and effort that, with better information, might have yielded higher accomplishment. Should guitar teachers judge information? After all, everyone is different, every idea has possible merit for someone, so let’s try to see the good in everything. This philosophy is fine to a degree. But carried too far, it reduces everything to absurdity. All things aren’t equal—why pretend otherwise? Further, what’s the value of a teacher who dispenses advice with little understanding of its real worth? Students are ill served by a pedagogical gumball machine. So we have no choice. We must judge information, however difficult it may be to do so.

I don’t minimize this difficulty. The sources of information—method books, instructional videos, private lessons, concert artist interviews, summer workshops, the odd remark during a master class—are endless and conflicting. Sturgeon’s Law (ninety percent of everything is crap) is some consolation, but we still face an avalanche of information to sift.

To evaluate this informational avalanche, we need standards. Without standards, evaluation is impossible. This thread, I had hoped, would shed light on what those standards might be. I’m less sanguine about this now, though I suspect perceptive

lurkers may have divined my underlying intent. But we've danced around the central issue long enough. It's time to cut to the marrow.

A defining characteristic of a good idea is that it offers real results. To illustrate, consider the following idea: when learning a piece, analyze the harmony. Harmonic analysis offers real results. Notes are no longer random bits, but rather are coherent parts of a larger whole. Our understanding of the music's structure deepens. Many pieces—Villa-Lobos Etude No. 1, for example—practically play themselves once they're understood harmonically. So we have real benefits.

Are the benefits intrinsic to the idea itself? Anything can yield peripheral benefit. War, for example, often spurs scientific advances, but that's hardly a justification for war. Further, scientific advances don't require war as a precondition. A good way to see if benefits are intrinsic to an idea is to ask whether those benefits would survive the idea's absence. Consider again harmonic analysis. Do its benefits—greater musical coherence, deeper structural understanding, easier learning of the piece—survive its absence? Of course not. The benefits are a direct result of harmonic analysis.

By this standard, harmonic analysis is a good idea. Thus, it's good pedagogy. Does “back to front” meet this standard?

An aside: Suppose someone proposed an idea suggesting that technique should get better as one plays toward the end of a piece. Would anyone take this seriously? Why should technique be better at the end rather than the beginning? Technique should be reliably strong at every part of the piece. So why take seriously a suggestion that memorization should get better as the piece progresses? Shouldn't memorization be reliable at every part of the piece?

Throughout this discussion, there have been two glaring omissions in the defenses for “back to front.” First, it's defended as though it exists in a vacuum. Second, there's been no serious look into what benefits it actually generates.

Let's address the first point. Consider this:

I see this almost every single day in my vocation. A student can play a piece, beginning to end, with no significant errors. But if I arbitrarily pick a spot and tell them to start there, they fall apart—more errors physically and mentally. Clearly this throws them off their comfortable routine of playing more from a rote manner than a thoughtful one. Constantly jarring them from different places in the piece better provides them with the comfort level to play the piece from any measure on.

Does “back to front” address this problem more directly than other possible ideas? No. Analyzing the musical form is one better idea—now the student is better able to start from any clearly defined section of the piece. Another better idea is to create and memorize landmarks throughout the piece—students doing this can easily start from any landmark chosen at random. Whenever you compare “back to front” to other ideas relevant to whatever problem you're trying to solve, it always comes up short.

Now to the benefits generated by “back to front.” Consider the student plagued with memory lapses. There are many possible causes. For example, perhaps the student has little or no understanding of harmony, seeing notes merely as random bits of information having no relation to each other. In this case, he needs to learn chord construction and functional harmony—this generates a deeper understanding of the music. Or perhaps the student isn't sufficiently aware of the fingerings. In this case, he needs to more explicitly examine what fingerings he's using, perhaps even memorizing each hand—this generates a deeper understanding of what it takes to get the music played. Or perhaps the student is focused on avoiding mistakes as he performs, a negative focus that has him playing scared. In this case, he must discipline himself to think of more positive things during a performance—this generates a deeper understanding of a positive mindset during performance.

In each of the proposed ideas—harmonic analysis, examining fingering, developing a positive mindset—obvious benefits are generated. Further, these benefits are intrinsic to the ideas, not peripheral. What comparable benefit is generated by “back to front”?

An obvious objection is that no one intends “back to front” to be used in isolation, and that it should be used freely and creatively with other ideas. But this hides the fact that “back to front” itself generates nothing. It's a pedagogic parasite—it survives only by feeding on the benefits generated by better ideas.