

CONTEXT CLUES

Dynamic intonation requires a keen ear

By Cliff Hall

“You can’t look a note in tune.” This was the mantra of my violin teacher Joseph Lanza (1933–2006), assistant principal second violinist and longtime guru of the Eugene Ormandy era of the Philadelphia Orchestra. Years after his passing, I would still hear these words over and over again as I scoured YouTube for just the right mechanical technique to improve my intonation. But I discovered that without a fixed target in mind, the most well-shot arrows will still often miss their mark if you don’t hear the note in its proper context a split second before you play it. And many teachers focus on the mechanics without this in mind.

Ever the loquacious analyst, Carl Flesch arrived at the same understanding in his book *The Art of Violin Playing*, where he technically dissected the process: “Therefore, granting that I have played the A in tune, in order to play the B-flat mathematically correct, I would have to place my third finger at so true a point as not to vary 1/30 of a millimeter, and not the finger, which is 10 millimeters broad at this point, where it presses down the string . . . *in the physical sense, ‘playing in tune’ is an impossibility* . . . The opinion is generally entertained that the cause of *impure* intonation, of ‘playing out of tune,’ must be sought in some manual lack of skill and should be, so to speak, conceived of as an error of movement. In reality, however, the primary cause of this evil is an *auditory*, not a manual, deficiency.”

So, suffice to say, this skill is hard for mere mortals, but was learning intonation difficult for a master violinist like Gil Shaham?

“Maybe like my whole life,” says Shaham with a laugh in a phone interview. “That’s the whole violin thing. Maybe 90 to 95 percent of violin playing—that’s the challenge.” Shaham remembers his first teacher’s approach to the task. “He was obsessed with intonation,” says Shaham. “And he was right.”

Augustin Hadelich



SUXIAO YANG

Enter *dynamic intonation*—a way of playing in which fingers don’t just land about where they should to play in tune but instead are trying to fit accurately into a harmonic landscape. “The key is ‘intonating’ based on surroundings—that is the essential skill,” writes German-born virtuoso violinist Augustin Hadelich in an email. “There are intervals that are either correct or not—fifths and fourths. Other intervals (thirds, sixths, seconds, sevenths) can be bigger or smaller depending on circumstances without sounding out of tune or unpleasant—there is a little bit of leeway.”

Not to say a solid technical foundation is not important. Great violin pedagogues of the past and present like Ivan Galamian, Shinichi Suzuki, Paul Rolland, and others justifiably wrote extensively about mechanical concerns, like a good hand frame, consistent curvature of fingers, and the like. “It is hard enough to play in tune. A bad hand frame can make it even more difficult. The best hand frame varies from player to player though, based on the size and shape of their hand, but there are some ‘wrong’ ways to hold your hand that make things much harder,” writes Hadelich, who, at press time,

was scheduled to release his next album, *American Road Trip* (Warner Classics), at the end of August.

“The hand shapes that are required for playing in tune are often counterintuitive—for example, it is hard to separate the middle finger and the ring finger, but we often need to on the violin if we have to play a whole step in a low position with these fingers. This is why practicing scales is useful—to train the hand in making the right shapes, in keeping half steps small and whole steps big, so these patterns become second nature eventually.”

Edwin Gordon (of Music Learning Theory fame), postulated, however, that only if students are audiating (defined by Gordon’s institute as “a cognitive process by which the brain gives meaning to musical sounds” or “the musical equivalent of thinking in language”) the context (tonality or meter) are they likely to put the content in the right place. **Gordon protégé Michael Martin expands on this process.**

“Good executive skills, the physical techniques the performer must master, are essential to playing in tune. However, executive skills are not enough. No matter how well developed the executive skills are, violinists

will not play in tune unless they are hearing good intonation in their minds before playing,” says Martin, who has coauthored *Jump Right In: The Instrumental Series* and contributed a chapter in *The Development and Practical Application of Music Learning Theory*.

In dynamic intonation terms, a player can hope to play in tune only if they know what note of the scale and what the underlying harmony is. For example, the sweetness of an E in the key of C major in the tonic chord sounds fundamentally different from a resolution-pushing E in the dominant chord in F major.

“Good intonation comes primarily from audiating the underlying tonal structure of the piece that you are playing. If you are hearing in your mind and understanding the underlying resting tone, harmonies, and harmonic voice leading, you are much more likely to play in tune,” says Martin. “Most often overlooked is audiation in general, and specifically, the audiation of context. Gordon used to say that all learning must begin through the ears. Just as language is first learned through the ear, music must be first learned through the ear. Gordon also said, ‘We must begin without notation, so that we can transcend notation.’ It is important to note that the most important aspects of musical performance cannot even be notated. Tone quality, style, phrasing, intonation . . . all of these can only be learned through the ear!”

Hadelich notes the challenges of intonation in groups as well: “It gets more complicated as you play with other instruments—on a piano, every note is a tiny bit out of tune (the so-called equal temperament), and it’s easy for violinists to fall into the trap of playing too sharp. The ear can get used to it, but for a non-violinist listener, sharp violin playing does sound unpleasantly out of tune,” says Hadelich. “With orchestra, wind intonation does tend to go up. As a consequence, upper strings in an orchestra also play a bit sharp to match that. It is a whole orchestral tradition that has formed, in order for instruments with different intonation patterns to play together.”

One trick that some violinists rely on is hearing the ringing overtones of open strings when fingering a note that is sympathetic. Another common technique is to check their tuning by playing the notes together with open strings.

“If what you are playing is in D major or A major, then you can use open strings, but in some keys, you simply don’t have any pure intervals with open strings to check, or the open string is the wrong interval,” says Hadelich about the latter technique. “That is why in the key of F major, you should not necessarily tune to the open A string during the F major harmonies—because how big and how narrow is that third between the F fundamental and the A third? Tuning the F to be a pure third would make it far too high. With an orchestra, the A’s you play in

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F major have to be slightly sharper than the open A string, if you play with winds.”

One such piece is Mahler’s First Symphony, which is commonly referred to as the “Titan.” Though it starts in D major, there are endless modulating passages where players would easily drift out of key if they depended on ringing overtones for key stability. Hadelich has some advice for navigating these tricky tonal waters.

“A player needs to know which key they are in, what the tonic and dominant and subdominant are, where it is modulating. This information is crucial to understanding what’s going on. It often explains why we feel certain notes pulling at our heart-

strings, why the music feels the way it does,” says Hadelich. “Open strings are little help—you have to make sure that the fundamental notes of the key you are in are consistent, and that you are in tune with the other instruments . . . it is all about context.”

One of the bridges that Music Learning Theory builds between theory and practice is based on teaching students how to hear this framework. “Most teachers only teach ‘surface structure,’” says Martin. “I recommend that beginning instrumentalists spend at least the first three months without any notation. During those three months, they should be singing, playing by ear, harmonizing, improvising, and learning to sing and play tonic and dominant patterns, and, of course, learning good executive skills. Once students begin to read notation, at least the first 15 minutes of each lesson or rehearsal should be spent without notation, continuing to develop the aural skills.”

Hadelich encourages incorporating technical exercises with audiation. “Scales are a good way to practice all this. I would suggest not only just mindlessly playing scales from the bottom up, but also first figuring out what pitch the fundamental notes (I, IV, and V) are, and whether they are in tune with each other—and then filling in the notes in between,” he says. “One could add that this becomes very important for the ‘weird’ keys (like D-flat major) when it is not as obvious from the ringing of the violin and the open strings where the fundamental notes are.”

Although the details of dynamic intonation can start to sound both granular and fuzzy, Hadelich assures me that the process is very clear. “This sounds incredibly theoretical and complicated—it isn’t actually,” he says. “This is what sounds best, and you can also arrive at this kind of tuning purely by using your ear, without all the analysis.”

And though playing in tune is a lifetime pursuit, Shaham sees the difficulties of playing on a fretless fingerboard as a gift as much as a challenge. “I do think we’re very lucky with the violin because we can be expressive. I love that we can play just intonation and can do expressive things like push up leading tones,” says Shaham, reflecting upon how the skill pushes players to become better musicians. “The hardest thing about intonation, which is like everything else, is to learn to listen.” ■