Musical Expression
FROM THE START

by Bob Duke

The naturalness of human expressivity

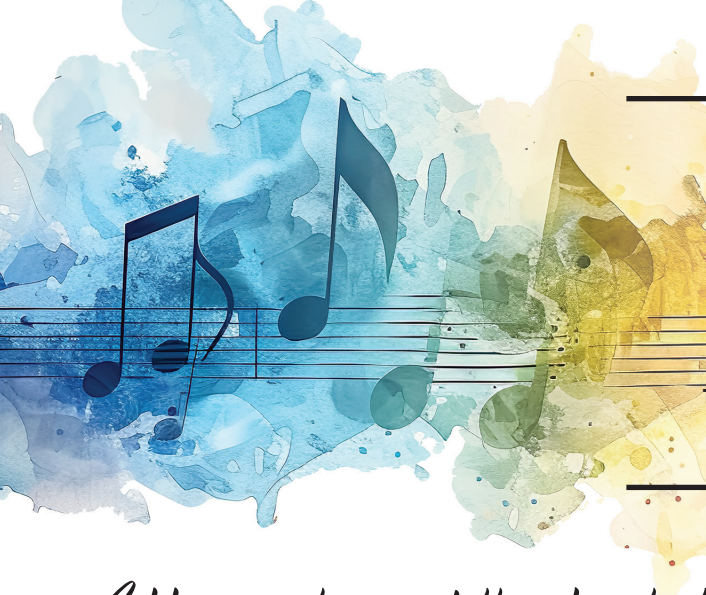
Children are inherently expressive, and throughout their life experiences they interpret the emotional messages they receive from others and in turn convey what they think and feel through sounds, gestures, and facial expressions. Children's very first vocalizations are imbued with expressive inflection. Squeals of joy and cries of frustration appear in their expressive repertoire long before words do. Even days-old infants are capable of imitating many of the facial expressions of adult caregivers, and they soon learn the meanings of innumerable expressive sounds and gestures, including subtle variations in loudness, timing, duration, and patterns.

As children develop, their innate predispositions combine with lived experiences to create a tremendous expressive capacity. Hearing a petulant two-year-old declare "I don't *want* to" with perfectly timed inflection is but one illustration of how natural and intuitive expressive inflection can be. Children quickly recognize that the prosody of speech conveys meaning beyond words and syntax. In many ways, the inflections are as important a component of speech as the words themselves. *So it is with music.*

Most children have been hearing music since before they were born. They know a lot about music. Their many hours of passive listening have led to the development of musical expectations that are at the heart of musical expression. Of course, they don't know what to call any of the phenomena they've been experiencing. They wouldn't know a caesura from an accelerando, but they have very good intuitions about how music works and how music goes. This implicit musical understanding can advantage their learning—if we allow it to do so.

Making the most of what children already know

Today's parents of young children are probably familiar with so-called balance bikes or stride bikes—bicycles with no pedals—that are designed to introduce bicycle locomotion to beginners. Teaching kids to ride a bicycle by starting on a balance bike is wildly successful and in many ways superior to starting kids on regular pedal bikes with training wheels.[1] What's the essential feature of bicycles? Getting from place to place in a faster, more efficient, and more fun way than walking. What's the hardest, and weirdest, thing about riding a pedal bike for the first time? Keeping your balance while your feet don't touch the ground. Think about that. Before mounting a pedal bike for the first time, almost everything you did on land since you first learned to walk you did with your feet on the ground, and suddenly, your feet are resting on pedals in the air. Training wheels or not, it's a weird sensation. A balance bike offers a different experience, one that embodies the essential features of biking—riding, steering, and balancing—and eliminates the hardest thing by allowing you to stand, walk, and run on your feet, *which you're already quite good at*. This way of approaching a new skill is effective because it combines in the new experience with what novices already know.



Practicing challenging components of complex tasks in isolation is certainly a productive approach to learning, but the longer task components remain isolated, the more difficult it becomes to assemble the components into a coherent whole in the future.

Adding complexity to skills with multiple components

It seems axiomatic that teaching something complicated to a learner demands that we break down the complicated goal into more manageable parts. But there are multiple ways of deconstructing a complex task, some that successfully maintain the essential features of the task itself while limiting the psychomotor demands of doing it and others that fail to retain the task's essential features, thus making it harder to master the target skill in authentic circumstances in the future.

Many kids, like many adults, love the game of baseball. Eager parents who introduce their children to the game often begin by playing catch. Most kids also love to run, and soon after they can catch and throw a ball, it's possible to put together the running, throwing, and catching and start playing baseball. What's the hardest thing about playing baseball? Hitting a moving target with a stick. So, for very young children, we remove the hardest thing and put the ball on a tee at home plate. The batter hits the ball off the tee, all the while maintaining the essential features of baseball—hit the ball where opponents aren't and then run to first base before a fielder can get the ball to the first baseman. It's real baseball, right from the start. As kids gain experience and skill, we remove the tee and transition to "coach pitch," because an experienced adult can throw the ball over the plate with a reliably consistent velocity. There's now a moving target to hit with the bat, but because the adult is pretty good at throwing, it's a *predictable* moving target. After gaining more experience, some players on the team learn to throw the ball over the plate and assume the role of pitcher; now the moving target is less predictable, and connecting with a pitch requires greater perceptual-motor control. Throughout all these experiences, the essential features of baseball are ever-present, and each stage of learning introduces increasing levels of task complexity.

How procedural memory works

Learning is a process of establishing and refining memories in the brain, and the formation and modification of all memories, including procedural memories (memories for how to do things, which many people refer to as "muscle memories"), require changes in the brain's *physical structure*. Memories don't reside in our brains as disconnected bits of past experiences. All our memories are profusely interconnected with other memories, many of which are related to the contexts in which memories are acquired and refined. What's more, the individual components of complex procedural memories are tightly interconnected. Learning to bat a baseball includes component memories related to your feet, your center of gravity, your focus of attention, and your past experiences with fast-approaching targets, all of which are connected to one another and all of which affect one another.

Memories for skills with multiple components are not like assemblages of Lego bricks, one for each component, that you can put together and take apart at will. For all of us who took class piano as undergraduates, we know how unpleasant that course would have been if we'd spent the first semester playing only right-hand melodies, the second semester playing only left-hand accompaniments, and only then tried to play hands-together. Seems absurd on its face. Why is that so obviously a bad idea? Because we recognize that playing one hand alone is not the same (at all) as playing with both hands together. Playing the right hand together with the left hand is a *different right-hand memory* from playing the right hand alone. This is not to say that practicing one hand of a piano piece is never useful. Of course it is. But if it's not integrated relatively early with the movements of the other hand (and the pedal), trying to play hands-together will be made more difficult, not less.

Singing and playing music beautifully and expressively likewise combine multiple aspects of perceptual-motor control. Expressive inflection entails much more than merely playing soft when there's a ***p*** and loud when there's an ***f***. Almost all the notes and phrases we sing and play have a shape to them, and those shapes convey expressive meaning. Regardless of whether you're singing or playing an instrument, numerous components of perception and action need to operate together to produce beautiful, expressive music. Learning to play only *in*expressively along with a metronome, for example, can actually inhibit the subsequent addition of expressive inflection, because playing or singing with expression is *a different memory*.

Many adjudication sheets make it appear as though the components of music performance are entirely separable (tone, intonation, dynamics, expression, etc.), but in human memory, they are not. Every time you sing or play while focusing only on note accuracy or rhythm while at the same time singing or playing out of tune or without expressive inflection, that lousy intonation or

flat expression becomes part of the note-and-rhythm-accuracy memory. You can't just snap on the tone brick, or the intonation brick, or the expressive inflection brick later and expect the note and rhythm accuracy to remain just like they were before. You've got to create an entirely new memory that integrates all those components.

In music-making, expression isn't the hardest thing. In fact, for most children, it's the most intuitive thing. What's the hardest thing about making music? Controlling your vocal apparatus or wrestling an instrument into submission. Although expressive inflection is not the hardest thing and is arguably the most important thing, expressive inflection is often left out to make the other stuff more doable.

Of course, if young musicians are trying to learn music whose technical demands are at the brink of their motor capacity, then thinking about expressive inflection is nearly impossible. But imagine instead providing many opportunities for young musicians to perform music that's well within their technical capabilities while challenging them to make the music beautifully expressive (lovely tone, in tune, rhythmically spiffy, expressive shape).[2] That kind of goal shifts the primary challenge away from merely getting the notes to speak and toward performing a beautiful rendition of whatever it is they're playing or singing. Doing so limits the hardest thing—controlling your voice or your instrument—and maintains the essential feature of music-making: expressing ideas beautifully, confidently, and convincingly to listeners.

Practicing challenging components of complex tasks in isolation is certainly a productive approach to learning, but the longer task components remain isolated, the more difficult it becomes to assemble the components into a coherent whole in the future. When we organize instruction to make complex tasks more manageable for beginners, where do we direct learners' attention at the outset, and what do we ignore? Given what's known about how our brains establish and refine skill memories, we should make the most important component the focus of attention at the very beginning and throughout the course of study, especially when the most important thing is already intuitively understood by novices, even before formal instruction begins.

Musical expression from the start.

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