A show of hands

It's the middle of March and here in the frigid Northeast we had a little tease last week when the temperature outside went up into the fifties for a day or so. But while this is a beautiful sunny morning, it's around twenty degrees outside, and the wind is blowing hard from the northwest. It's bone-chilling cold and so dry that joints in floor boards are wide open, and my hands feel like baskets full of fall leaves. The almond scent of Jergens $^{\text{TM}}$ fills the room to no avail.

In the last few days I've been working with the old-fashioned hot glue that organbuilders favor. I start with crystals of dry glue the consistency of fancy rough-grain raw cane sugar (funny how much extra we're willing to pay for something that isn't highly processed!) and cook them with water in my temperature-controlled glue pot. It's a versatile glue because I can make it as thick or thin as I want. It bonds leather and other materials to wood beautifully, and fifty years later when it's time to replace the leather again, it can be removed from the wood with hot water.

I've been gluing the hinges, belts, and gussets on an Aeolian-Skinner wind regulator (bellows). I spread glue on the wood and the material I'm applying, put it in place, and rub it down with a hot damp rag, squeezing excess glue out of the joint so the chemical bond is between two pieces of material, not a layer of thick glue.

I have a big double-boiler—the kind of thing from which you ladle soup in a cafeteria—to keep that rag nice and hot. It holds two gallons of water (or soup) and keeps it as hot as I can stand. I put my hands in the water, then wring the rag as dry as I can. No wonder my hands are uncomfortably dry. It has led to one of those painful splits at the corner of my right thumbnail.

But wait, there's more. The other day I was installing a new rectifier in that same Aeolian-Skinner organ because the old one was soaked in the flood that wrecked the regulator. The wires that carry the direct current power from the basement to the console and organ chambers three floors up are about the thickness of my little finger. When I was stripping the insulation from the wires, I took a teeny sliver of copper through the skin of that same thumb. Now as I write, every time I touch the spacebar my thumb throbs. I'm a big guy and I think of myself as pretty tough, but those two little injuries are nearly all I can think about just now.

Hanging by a thread

According to $USA\ Today$, there were five major league pitchers with annual

salaries above \$20,000,000 in 2012. These are the cream of the crop of prime starting pitchers, so they would be starting about every fourth game. Each team plays 162 games each year, so without injury, those pitchers would start about forty games. Let's say for argument that they pitch six innings each time they start a game, face five batters each inning, and throw five pitches to each batter. That's 6,000 pitches in a season or \$3,333.33 per pitch. Do the same math another way and it comes to roughly \$500,000 per game. One of those guys gets a hangnail and each time he throws the ball he's in agony. His accuracy suffers, and the manager puts him on the bench. Okay for him because he's on salary. But his employers lose the benefit of \$500,000 worth of his effort for each day of the hangnail.

Me, I just go back to the glue pot and put my hands in the hot water. Walk it off. You'll be fine.

The panda's thumb

Our hands define us. They define us as a species, they define us as individuals, and they define us as musicians. We join some of the primates including the great apes, a few rodents, and to a lesser extent, the panda, in being blessed with an opposable thumb. While the primates use their thumbs to climb trees, and make primitive tools from sticks, our thumbs have allowed us to achieve extraordinary dexterity. We use that dexterity for practical tasks and for expression.

There are twenty-seven bones in each of our hands and a complex network of muscles and nerves. It was the physical therapy I had following a bout of "Carpenters' Elbow" (I don't play tennis) that taught me how the tendons and muscles in our forearms are related to the bones in our hands like the strings of a marionette. Put your left hand on the beefy part of your right forearm and wiggle your right fingers, and you'll feel those little strings moving around like manual trackers. Come to think of it, they are like manual trackers.

Keyboard musicians are defined and define themselves by their hands. I have to admit I'm amused by publicity headshots of colleagues that include their hands. The photographer has struggled to find natural looking poses to include the hands in a close-up of an organist's face, when most of the reasons we bring our hands to our faces shouldn't be photographed. I chuckle as I remember my grandmother chiding me and my siblings to "get your hands away from your face."

Wave it like it is.

Wendy has been actively involved at her alma mater, Brown University, as long as I've known her. She served on





Sewing hands

the Board of Fellows (she was a jolly good fellow!) for most of twenty years, as an officer of the Corporation for much of that time, and now serves as co-chair of the committee planning the observation and celebration of the university's semiquincentennial (250th) anniversary. Last weekend we were on campus for the grand kickoff of more than a year of anniversary events including a President's Colloquium on the Virtues of Liberal Education. One of the panel discussions that day brought four sitting state governors together with a professor of political science as moderator for a wide-ranging discussion about modern American politics.

Two of the participants, Governor Maggie Hassan of New Hampshire and Governor Peter Shumlin of Vermont, had hands that were unusually large and expressive. They were seated in plush armchairs (brown, of course) onstage in a large lecture hall, and I was struck as I listened and watched at how much their beautiful hands added to the effectiveness of their delivery. The other two governors had good things to say, but they seemed less eloquent.

In March of 2011, Wendy accompanied her client, former United States Poet Laureate Donald Hall, to the White House as he was awarded the National Medal of Arts. Among the tales with which she came home was the lengthy conversation she had with another honoree, Van Cliburn, the storied pianist who won the Tchaikovsky Piano Competition in Moscow in 1958. Along with comments on his legendary grace and regal carriage, Wendy spoke of his enormous, expressive hands.

I googled Van Cliburn and watched a few performances on YouTube. I saw the obligatory tours de force of Rachmaninoff and Tchaikovsky, but was singularly impressed by his presentation of the National Anthem at the start of the 1994 opening day game of Major League Baseball's Texas Rangers in the newly completed Rangers Ballpark in Arlington, Texas. We've all seen the worst of so-called musicianship in such venues, not to be confused with soprano Renée Fleming's marvelous offering at this year's Super Bowl, but watching the sixty-year-old Van Cliburn stride on to the playing field dressed in white tie and tails, waving to the crowd, and seating himself at the piano was to witness a classy man bringing his classy act to a venue otherwise not known for my pres-

ent definition of class.

And those hands. They were big as all outdoors. I marveled as I saw that left hand playing three- and four-part chords at the spread of a tenth in rolling eighth-note passages. It looked as though there was about eighteen inches between the piano's fallboard and Van Cliburn's wrists.

You can read about this performance and see the video at http://tinyurl.com/ p6faslj. I bet you'll agree, the Fort Worth Symphony didn't add much to the experience, except that it was fun to see Van



Pottery hands

Cliburn stand for the second verse, place a huge hand over his huge heart, and sing. Isn't America a great country?

Last night, Wendy and I attended an all-Beethoven concert of the Boston Symphony Orchestra conducted by Christoph von Dohnanyi. They opened with a lackluster performance of *Leonora Overture Number 3*, and then were joined by pianist Yefim Bronfman for the First and Second Piano Concertos. That's pretty good work for a pianist, especially when you consider that he plays the remaining three concertos and the Triple Concerto with the same band in the next two weeks. Wow, what a lot of notes.

Mr. Bronfman does not cut a dashing figure as he crosses the stage toward the piano. But I don't have to risk my relationship with him by describing any further because I can rely on novelist Philip Roth to do it for me. In his novel, *The Human Stain* (Houghton Mifflin, 2000), the narrator observes the main character, the disgraced Coleman Silk, having his somewhat creepy and typically Rothian way with the fragile woman on whom he is preying during a live rehearsal at Tanglewood:

Then Bronfman appears. Bronfman the Brontosaur! . . . He is conspicuously massive through the upper torso . . . someone who has strolled into the music shed out of a circus where he is the strongman . . . Yefim Bronfman looks less like the person who is going to play the piano than the guy who is going to move it . . . this sturdy little barrel of an unshaven Russian Jew.

Philip Roth can say what he likes, because Mr. Bronfman is more than just a pretty face. He can rely on his hands to speak for him. I often marvel at how a great pianist can project the illusion of fluidity when in fact, the tone of the piano is generated by percussion. The musician's hands allow a control that produces the image of a waterfall rather than a hammer hitting an anvil. And Yefim Bronfman sprinkled that magic all over Symphony Hall. It's impressive that he played two concertos—I wonder how many hundreds of thousands of notes there were, and not one out of place. As I sat listening with my thumb throbbing, I marveled at the understated assurance of his hands—those amazing structures of joints, muscles, and sinews-and how they could project such torrents of expression and emotion.

We've got to hand it to you.

The business of learning to play a keyboard instrument involves training the hands to perform specialized tasks. We develop those muscles in unusual ways, refining the accuracy of aim and attack, and learning to simultaneously apply different amounts of pressure so as to emphasize notes of a melody. The muscles in our hands develop their own memories for the patterns of fingering in scales and passages in the pieces we learn. Our hands grasp the unique patterns of each of the twelve major and minor keys as easily as a doorknob. It is



Keyboard hands

that tactile memory that allows us to play without looking at our fingers.

As miraculous as the human hand on the keyboard might be, the basic position of our hands on the keys as we play is common to many other activities. Place your hands flat on your desk and you have a pretty good start for the hand position of a keyboard player. Contrast that to the left hand of the violinist or guitarist. I grab a handful of nuts from a bowl by turning my hand over and clasping my fingers in a position similar to what I might clumsily do on the neck of a violin, but if I move my fingers I drop the nuts. The position of the violinist's hand as he selects notes by pressing the strings against the neck is pretty much opposite that of an organist.

Take the violinist's tactile control a step further. It's difficult enough to learn to play the right notes on a piano keyboard. But let's face it, we're given a simple choice and a relatively wide margin. If you manage to play the key that is F-sharp without touching another key, you get whatever F-sharp the instrument has to offer. On the violin, some combination of seeing, hearing, and feeling must be achieved to allow the player to seemingly randomly select an accurate note. Listen for a few seconds to a beginning violinist and you'll know what I mean. The first four measures of *Twinkle*, *twinkle*, *little star* is like looking at your reflection in a fun-house mirror.

Even the guitarist has it easy because his luthier has reduced care by adding frets. But as much as the frets ease some of the difficulty of playing the instrument, our guitarist relies on the strength and evenness of the nails on his plucking hand to create his tone. No bundle of horsehair for him. A cousin of mine who lives near Paris was married to a classical guitarist who asked me to help him purchase the 800-grit sandpaper he liked to use to preen his fingernails. Snag a nail pulling open a cardboard box and you're on the bench, sitting next to the pitcher with a hangnail.

Practice and use has another effect on the fingers of a string player. Anyone else's fingers would get pretty sore jumping around on those strings. I think mine would be bleeding in ten minutes. But witness a great violinist playing a complex concerto and you'll know that thousands of hours of practicing is necessary to condition those little pads of flesh to endure that abuse. Adding to the physical punishment of playing the violin is the hickey they get from the neck rest.

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Modern carpenters are armed with pneumatic nailing machines. Walking past a construction site you hear POW POW POW at march tempo as nails propelled by air pressure slam through wood. But a good carpenter still has the old-time rhythm of placing a nail with one hand and driving it home with three rhythmic strokes of a hammer in the other. Watching a beginner start a nail in a piece of wood is like listening to that infant violinist. Many of us know the

special feeling when hammer strikes and thumbnail goes black.

A potter throws a lump of clay on a wheel, wets his hands, and coaxes it into center. Then with one hand open cupping the lump and the other closed with thumb pointing down, a cup or a bowl emerges by metamorphosis. Practice allows the creation of a set of plates similar enough in size to produce a set.

A surgeon uses forceps to tie complicated knots in monofilament thread to make leak-proof joints that can contain the pressure of blood as driven by the beating heart.

A tailor or seamstress puts the end of a thread through the eye of a needle, then bonds two pieces of fabric with microscopic stitches.

The massive boom of an excavating machine responds to the touch of the operator's fingertips on the controls, combining multiple movements into fluid, nearly human motion.

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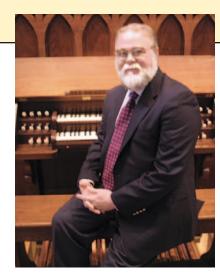
As generations pass, our bodies adapt to our circumstances. We rely on clothing

and central heating systems to keep us warm so we evolve toward hairlessness. The balding man takes comfort in the knowledge that he's more advanced than his hairy friends.

Early humans had to rely on large vestigial molars to reduce plant tissue to digestible forms. Think of a cow chewing her cud. Today the plants we eat grow in convenient forms and we get a lot of our nutrition from meat that is cooked and cut into small pieces, so we have evolved smaller jaws than our ancient predecessors. But we still have those pesky vestigials, ironically called wisdom teeth, and as few of us have space on our jaws for them, out they come.

Like our hair and our teeth, our hands have evolved and adapted to operate the devices we've created. One quick handshake is enough to tell the difference between a carpenter and an office worker. Notice how many tiny motions we combine to button a shirt. And look across the symphony orchestra to see how many ways our hands can be used.

What's next? If our hair is getting thin and our jaws are getting smaller,



think of our thumbs. Sit on a seat in the subway or a bench at the mall and watch the teenagers texting and playing hand-held games. Our thumbs will keep getting more nimble and I figure we'll always need our fourth and fifth fingers to grasp hand-held devices. But it will take fewer than a hundred generations for our index and third fingers to wither away from disuse. So put down that phone and go practice!

