

Portrait: Paul McNulty, Fortepiano Builder

DAVID HYUN-SU KIM

Photo: Majka Votavova.



CONVERSATION WITH PAUL MCNULTY IS simultaneously expansive and sharply focused. This is true generally—during our interview in Prague, this past spring, he mentions geometric proportions, cites Milton, and jokes about the advantages of wearing a tin foil hat—as well as with specific respect to piano building. His expansiveness is not superficial, but is rather powered with intensity and colored with an eager generosity. He mentions, for instance, that his latest audiobook is “Histoire de ma Vie” (Casanova’s memoirs) and, in addition to quoting a favored passage, enthusiastically details and demonstrates the Dr. Sbaïtso¹-like program that reads to him as he works. As we stroll past his van, he is impelled to show off a contraption that allows him to transport eight pianos at a time, describing precisely how it works, and recounting how it was constructed, all while helping me take good pictures so that I might recreate the device. This

¹ Think 1980s, 8-bit Siri.

tendency towards knowledge that is at once variegated yet integrated is apparent in his piano building. He builds no fewer than seven distinct types of fortepianos, about which he seems to know every last detail, and he is constantly comparing and cross-referencing their various designs and capabilities. His inventory and conversational character are thus in sympathy, and both suggest that he is eager to explore new topics and consider them thoroughly. That his pianos are world-class is therefore no surprise, but meeting him and getting a glimpse into his working process offers the tantalizing prospect that his instruments may reach still dizzier heights.

Although he is now firmly established as a top piano builder and one of the most important builders of his generation (the list of pianists who own his instruments is staggering²), McNulty's career path has been precarious: "It's just this very thin thread of consequence. [I could just as easily] be flipping hamburgers somewhere."

He initially trained as a modern piano technician at the North Bennett Street School in Boston, Massachusetts, and was earmarked for a position at the Steinway factory in New York City. It would have been a plum job, too, with the initial appointment involving restoration work and regulation for the show room; "upper crust work for a piano tuner." But when the phone call from Steinway came, and the offer was officially tendered, McNulty could hardly believe what he said. "Normally you say, 'I'll be there next week.' But I screwed it up! I literally told him, 'I'll take a raincheck.' Because I was at that moment helping Bob Smith put strings on a Graf.... I thought, 'Yeah... fortepianos.' The immediate appeal was fiddling with this [fortepiano by Conrad Graf]." As McNulty describes it, his 'conversion' to fortepianos was fast—and absolute. "And everything just went frigid and I was out. I had no career. But I'm very happy that I didn't wind up with Steinway."

McNulty's interest in fortepianos took him to Amsterdam, where he ran his own workshop from 1987 to 1995. One of the biggest challenges was finding high-quality soundboard wood. Traveling to various wood suppliers across Europe, he found only frustration: the mills were not interested in doing business with individual builders. Fortune intervened. "I came [to Prague] at the end of 1994 to buy an antique piano from the local harpsichord builder [František Vyhnaček].... He had a whole room stacked with slices of soundboard wood, 10

² Including, among many other individuals and institutions around the world, luminaries such as Paul Badura-Skoda, Malcolm Bilson, Vladimir Feltsman, Robert Levin, and Mitsuko Uchida. For more, see <http://www.fortepiano.eu/references/owners-musicians.html>.

feet high! He saw my eyes [widen]. And he said, 'If you need wood you can have a five-year supply and next winter I can cut you a tree.' No one had ever answered prayers for me. I drove home with this piano through the night, composing a fax, which I sent the next morning: 'I'll do anything.'" McNulty moved to Prague shortly thereafter, and relocated to Divišov (some 30 minutes from Prague, where McNulty now has his workshop and makes his home, in that order) in 1998. McNulty devotes a huge portion of his property to processing spruce, which is valued by instrument makers for its long, hollow, "resonating" cellular structure. Quartered logs arrive in the spring; these are cut into eighths, and then radial planks, which he subsequently cures for five years. A separate room is devoted to thinner cuts that are destined to become soundboards, and McNulty also uses a kiln for harder woods. He gets his spruce from the nearby Southern Bohemian forest and this source, in addition to satisfying McNulty's demand for quality, also provides a measure of historical consistency: this area was a major spruce source for Viennese builders from around 1790 through 1870 (indeed, a canal was built in 1790 in order to transport logs to the city's piano builders more efficiently), and the region's wood was singled out for praise by the celebrated builder Conrad Graf. McNulty shares Graf's appreciation, and believes that the climate gives the wood a special quality: "It is grown neither too high up nor too low, on the northern slopes of the east-west range of mountains on the border. On the Austrian side the trees are on the southern slopes, and they grow too fast, [whereas] the northern slopes are more shaded."

That McNulty is aware of this type of history and finds it relevant for his work is characteristic. Like Graf, for instance, McNulty has a team of workers, and this enables him to be involved with concurrent projects and increase his shop's overall output. And just as Graf insisted that certain parts of the building process remained strictly within his personal control, so too does McNulty remain solely responsible for crucial aspects such as soundboard construction and hammer-voicing. Yet McNulty's deep historical knowledge means that he is the first to point out that this similarity in workshop conditions only heightens his respect for the tremendous work ethic and skill of the Viennese builders: "There is no way for me to understand the production of Johann Andreas Stein, [who] in his 40-year career, produced 700 instruments, including the cathedral organ in Augsburg, which he played every Sunday! [Anton Walter] worked ten years, [with] ten workers, and built 385 pianos. And he was by no means the fastest. I have about 200 in 30 years. And I have my ten workers now, and I do not make 38.5 pianos per year. They were working their tails off, but they didn't do it after dark!" How to explain the gap in productivity, given the "superior"

technology of 2016? “The difference is none of my people was handed a tool at age 7! Nor was I. I made a bed when I was 25. That was my first woodworking experience. They [the Viennese builders] were not struggling [blindly]...; there was a proficiency and confidence that are reflected in the design.”

Today’s pianos, in particular the ubiquitous Steinway-type design, seem to reflect the loss of this level of craftsmanship. McNulty points out that the “cheapening and relentless commercial pressure on the piano industry leads us to this sort of Volkswagen/Model T standardization of the Steinway. It is simple in the case design. The cast iron frame—casting iron is pretty fast. You plug it into a frame [i.e. the wooden case] which is not elaborate, and off you go.” The simplicity of this design is brought into forceful profile by one of McNulty’s recent commissions, for which he undertook to build a copy of Liszt’s beloved Boisselot piano. This was the piano Liszt played and composed upon during his later years in Weimar (and is therefore presumably the piano upon which he conceived the B minor Sonata). Importantly, Xavier Boisselot was a lifelong friend of Liszt—they met when they were 15-year-olds studying in Paris, and Boisselot named his child Franz—and the instrument seems to have been designed specifically for Liszt’s musical character. The massive strings give the piano’s basic sound a striking fullness, and the clarity of the instrument, particularly in the thunderous bass, is shocking (and compositionally revealing). McNulty built the copy for the Liszt birth-year bicentennial (2011) and found constructing the instrument to be extraordinarily difficult. Boisselot had contrived to use notched support bars in the 1830s, but this ruined the tone of notes adjacent to the bars. For Liszt’s instrument, Boisselot resolved this issue by installing a composite frame underneath the soundboard, which is “desperately complicated. You have to fit all of these bars... [each bar] has to be cast, and it has to be threaded. It has to be fitted individually and it has to be notched. And everything in the right relationship, up and down and left and right.”

McNulty accordingly possesses huge admiration for the skill of late 18th- and 19th-century piano builders, and this respect brings meaningful consequences. It at least partially explains his interest in building copies; this interest is paired with a complementary aversion to designing an original piano based around his own ideas: “If it’s a question of design, I simply don’t want it. I simply don’t want to design a piano. It’s a waste of time. [I designed a piano once, and it is] reasonably attractive. But it’s no feather in my cap. I’m not happy that I made it. The satisfaction comes in good execution of a design which is revealing to me of something outside myself, something which is better than me.” McNulty’s aversion to grappling with design questions leads directly to a simple require-

ment: “Data! You have a question, and the question reasserts itself every time you build a damn piano. And if you have the data, you’re happy to use it. And then you retire the question.” Data is critical, and procurement thereof is little short of an obsession for McNulty. He squeezes every last drop of information from the antique pianos that he studies, and applies his findings with exactitude on the instruments he builds. As we sit in his showroom, encircled by his Stein, Walter, Graf, Pleyel, and Boisselot copies (he also makes a Fritz, and a Streicher is in progress in the next room), my organological queries repeatedly provoke an overwhelming deluge of immediately-recalled, specific technical data for not only the instruments he builds, but also for instruments he has encountered in the past. Indeed, it would be a minor feat to visit McNulty’s workshop and not be confronted with an artifact of his relentless data acquisition. During my visit, he makes reference to photographs, technical drawings, x-rays, a hammer-weight measuring device, endless measurement charts, and a magnet tool he uses to measure soundboard widths. Soundboard data, in particular, is essential for McNulty: “Sine qua non, can’t do it. If you have to guess what the soundboard thickness is, it might take you 200 examples to arrive empirically at the same result. You just can’t do it.” McNulty’s focus on soundboards is apparent in his conversation—he rattles off soundboard measurements for countless pianos over the course of my one-day visit—and is well-founded, given that soundboard thickness might very well be the decisive technical feature for any given piano. In particular, soundboard thickness characterizes the speed at which energy from a vibrating string dissipates. A thicker, more massive soundboard has greater impedance and so the soundboard requires more time to begin vibrating, resulting in a delay of the tone. The thinner soundboards that are characteristic of late 18th- and early 19th-century keyboard instruments have less inertia, so the energy is transmitted more quickly, causing the resulting tone to possess a direct, speech-like quality. The difference in soundboard width between modern and 19th-century pianos is significant. McNulty’s earlier copies (Stein, Walter, Fritz, and Graf) are generally around 3mm (“Walter’s rather standard thing is that his soundboards are never greater than 3.2mm”), and McNulty’s 1830 Pleyel is “about half as thick as the modern soundboard. [The] modern soundboard is about 10mm. The Pleyel is only 7mm in the top and 4mm in the bottom, 5 and 6mm in the general area. That’s a heck of a lot [of difference].”

That the Pleyel’s highest octave possesses a thicker soundboard than lower registers is again a technical feature with musical consequences. An increased soundboard width in the upper octaves gives more impedance, which changes the timbre. McNulty refers to the 1868 Streicher copy he is currently producing:

“it increases 1mm from 8mm to 9mm over the compass of one octave in the top treble. So it’s going slowly up to 8mm and then radically up to 9mm, so the top note is on 9mm. It’s a very stiff thing that gives a quality of ringing, which is helpful for the top treble notes on the piano. A clangorous kind of sound; the early Graf is thinner in the top and most earlier Viennese pianos tend to be thinner in the top treble than they are in the tenor.” The thin treble that McNulty describes is apparent in early 1820s Viennese pianos, and can be problematic even for repertoire from the late 1820s. This seems not to have been an instrumental deficiency against which composers were fighting, but an instrumental shift to which composers responded, and McNulty’s research suggests that Graf’s changing soundboard design may have been particularly influential. The soundboard data he has gathered shows that Graf’s earlier instruments have soundboard widths that are generally around 3mm, but that Graf suddenly more than doubled the width around 1823/24 to 6.4–6.7 mm. This may have been caused by Graf’s study of English designs, as well as by a need to differentiate himself from his competitors. In all cases, this relatively thicker soundboard is more sonorous and better-suited to later repertoire, and is a project which interests McNulty. His current Graf copy is of the earlier type, and he is keenly aware of the difference: “it [his current, early-type Graf] is very well balanced. The thing that it is not is as muscular as music later becomes... [it lacks] the substance for Schumann. It’s not an immediate idea, but I simply don’t have a Schumann piano, so I’m looking forward to it and I’ve taken measurements. If I have time to do it, I’ll do it.”

To situate soundboard data in a musical-pianistic context is typically McNultyian, and he goes still further, pointing out that soundboard thickness determines other important technical—and musical—features. A thinner soundboard already produces a richer partial spectrum because its slighter mass does less to restrict the available motions. This condition amplifies the same consequence in that it allows for lighter hammers which, in turn, produce more partials: “If you have a very thin soundboard and you have a very heavy hammer, it [the soundboard] won’t know what to do with itself. A thin soundboard can be activated by a very low energy hammer, and a very low energy hammer can get the hell out of the way because it has no mass. And the time in which it is in contact with the string determines which partials survive. The partials that are faster than the duration of contact of the hammer are eaten.” McNulty’s interest in the critical mechanical features of the sonically-decisive moment of contact drives one of his recent passions: hammer shank tuning.

“In the time that the hammer is in contact with the string, a pulse goes down the shank and back. Whatever is happening in the hammer assembly—the

hammerhead and the hammer shank—is integral to the quality of the sound that’s being produced, [which is] not just [determined] by the composition of the leather and so forth. That’s why this hammer tuning is so important. The string is responding to the vibration that pulses through the hammerhead and the hammer shank.” McNulty points out that Viennese hammer shanks (and not the shanks in modern or English actions, which are shaped like dowels) are carved in such a way as to allow for two distinct modes of vibration. He has measured the shanks of antique pianos and reports that these two modes always relate in primary partials to make either an octave (Stein, Fritz, and Graf, all of which have shanks that look slender from above) or a quint (Walter and Shantz, which have more robust-looking shanks). McNulty’s enthusiasm for this topic is boundless. On a recent visit to Ithaca, New York, he spent an evening tuning the shanks on one of his older instruments. Such shank tuning “affects the speech of the note. The note becomes less percussive and more singing... more crystalline, more shine.”

McNulty’s interest in hammer shank tuning nicely encapsulates at least part of his excellence as a builder. Through careful measurement of antique instruments, study of piano physics, historical knowledge, consideration of the relationship between mechanics and acoustics, and a diligently refined sensitivity, he has arrived at an intuitive understanding of how the instruments work. This understanding allows him to focus on and perfect those aspects that are musically crucial. In this sense, it would be somewhat misleading to characterize his work as fundamentally centered on reproducing older designs. As one might expect of a mind that is forever seeking and meticulously working out fresh organological problems, McNulty’s work—while certainly resulting in objects that are most easily labeled “copies”—is oriented primarily towards not duplication, but discernment. His respect for the builders and his intense curiosity make it impossible for his activity to be otherwise. Viewing his work from this perspective brings to mind some familiar arguments about the performer’s relationship to the composer’s score: is the performer engaged in replicating some fixed work object? Is it the performer’s duty to follow the dictates of the composer? McNulty is unsurprisingly fluent with these lines of thought and is keen to contrast as well as clarify his own activity: “If you’re talking about Hogwood, who says if we have no documentation for a trill we can’t play it, that’s a restrictive version. But if you have a piano, that’s a full document, that’s the entire sonata, never mind the manuscript. The manuscript is not the music, but the piano is the piano. It’s an artifact more palpable than a manuscript. There’s nothing restrictive in confining yourself to the example in front of you. It’s rather... it’s a revelation.”

