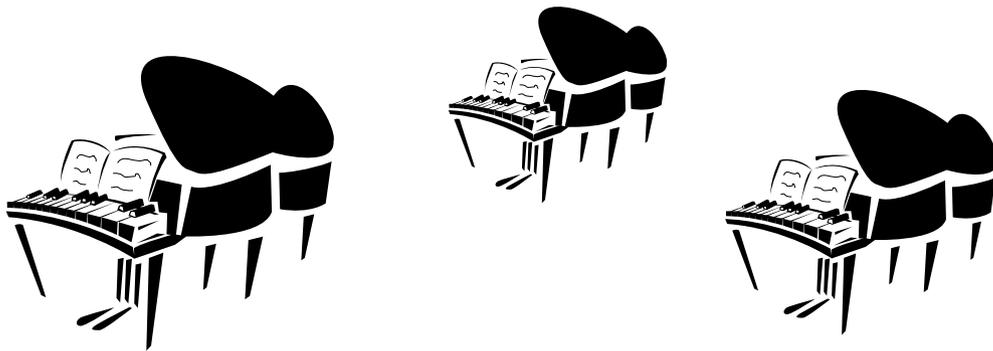


by Carol Leone

Goldilocks

Had a Choice



Goldilocks' Story

Once upon a time, there was a little girl who stumbled into a warm and inviting concert hall. On the stage, she saw three beautiful concert grand pianos. "Oooh," she thought, "they look so wonderful. I'll bet I can play quite well on them!" So, she sat down on the first piano bench she came to. As she joyfully stretched her little hands out over her octave passages, a startled frown appeared on her face. "Ooh, ow! These keys are too big!" she exclaimed. And so she moved to the next beautiful, shining, black instrument. Alas, it not only had large keys, but a stiff and unyielding action. "Oh, you big bear!" she scolded the instrument. "Why won't you let me play the way I know I can?" Feeling dejected, she nonetheless shot a hopeful glance at the third piano. It looked identical to the other two, but she sat down at it and caressed the beautiful keys. As she began to play, a thrill and delight came over her. "These keys are just right! Oh, look! I can play large chords with ease, and don't my hands look ever so pretty and comfortable on these small keys?" And so she played all of her repertoire, then curled up happily on the bench and dreamed of owning her own small keyboard.

Carol Leone is assistant professor of piano at Southern Methodist University. She has performed and taught throughout the United States and in Austria, Italy, Germany, Russia, the Czech Republic and South Korea.



In the fall of 2000, Southern Methodist University became the first American university to own and study the reduced-size keyboard manufactured by Steinbuhler and Company. My college students and I have been studying the effects of using this reduced-size keyboard, which was retrofitted into a Steinway B. We have

spent more than two years experimenting with repertoire and etudes on this keyboard, and have had amazing results.

We set about to discover the meaning of the following words from the manufacturer: "The conventional piano-keyboard, established more than 100 years ago, is too big for many, depriving them of the joy of mastering the great piano repertoire. Up until now a pianist could only imagine what it feels like to play the piano with larger hands."¹ We wanted to experience the results of having "larger hands." What would be the technical and musical benefits? In addition, I wondered if this keyboard could offer relief to pianists with playing-related injuries. Further, I imagined that the use of the smaller keyboard might revolutionize traditional teaching of children.

In today's ergonomic world, the overriding principle "form follows function" is the key to the success of most products. In our case, the "form" is our instrument, and the "function" is the playing of it. With ergonomic principles in mind, many have begun to question whether small-handed pianists are captive to a false form, and are there many unable to fully realize the

function? For most small-handed pianists this has been a moot question for a very long time. With the advent of this excellent new technology for retrofitting standard pianos with a reduced-size keyboard, a new frontier has opened for pianists with small hands. This new territory is open for those pianists and educators willing to make a paradigm shift in exploring the musical and technical benefits of the smaller size.

The Technology

The idea is not new. Early pianos, of course, had shorter and narrower keys. The famous pianist Josef Hofmann used a reduced-sized keyboard designed for him by Steinway in the 1920s and '30s when he toured as a concert artist. In the nineteenth century, a Czech company designed smaller keyboards "for ladies."

Today, the conventional keyboard has an approximate 6.5-inch octave with an overall width of 48 inches or more. The smaller keyboards from Steinbuhler and Company have a 5.5-inch octave and are just slightly less than $\frac{2}{3}$ size in proportion. The company also builds $\frac{1}{2}$ size keyboards that have a 6-inch octave, for medium-sized hands.

When one pulls out the action, it is possible to see how the treble keys fan to the right, and the bass keys fan to the left, allowing the reduced-size keyboard to reach the piano's string locations. Its engineering ensures there is no loss of power, feel or response.



New, adjustable keyboards that come with their own action stacks are available for any grand piano. A technician can install them (into a piano of like make and model) in an afternoon, thus making them

"transportable." Nothing on the original piano is altered, and the piano thus has two keyboards that can be easily interchanged in a couple minutes.

Adjusting

I have discovered that pianists' first reaction to the idea is invariably a two-part question: "How can one adjust to the size?" and "What about going back and forth between the two sizes?"

The answers to these questions were most surprising. Our expectation was that it might take days or weeks to adjust to this keyboard. In fact, we found that it generally takes a pianist less than an hour. The most challenging interval to learn is the new octave size, which now feels like a seventh. I have observed that the more physically gifted pianists are, the more quickly they adjust. Some guest pianists have sat down and played it with no trouble. The majority of children who have tried it also played it immediately with barely any noticeable disorientation. I now have developed a guided series of small orientation exercises that take about five minutes to execute and allow pianists to play their repertoire accurately afterward.

The question of going back and forth between the two instruments took longer to answer. Those who regularly play both keyboard sizes, as I do, are familiar with both, much as one might be if driving two family cars. Organists and harpsichordists regularly deal with this phenomenon without problems. Violinists who also play the viola experience the same type of dual ability.

The preference in my studio has been to choose particular repertoire for each instrument. For instance, one graduate student opted to play her graduate recital using both keyboards. On the first half of the recital, she used the conventional keyboard to play Bach and Beethoven. On the second half, she switched to the $\frac{2}{3}$ keyboard to play Ravel and Ginastera. Because she had learned these pieces on their respective keyboards, a warm-up on the $\frac{2}{3}$ keyboard during intermission was not necessary.

Since the invention of the transportable keyboard, the issue of adjustment becomes less bothersome. Since I know I will be able to transport my keyboard/action to

another piano, I can practice solely on the $\frac{2}{3}$ keyboard, knowing I will take it with me when I perform. The benefit of this is I now have to adjust less than ever before. Since I have my own action and keyboard, the touch and feel always will be predictable.

In a situation where my students and I know a particular piece of repertoire eventually will be performed on a conventional keyboard, we often have opted to learn it on the $\frac{2}{3}$ first, then move it to the conventional size to ease learning and prevent injury.

Some students also reworked an old piece on the $\frac{2}{3}$ and then returned to the conventional keyboard. Upon returning, they reported their hands were more comfortable and relaxed than before. Essentially, the smaller keyboard had taught them a more natural and relaxed approach to the piece, just as the conventional had built in some tension from stretching and straining.

Hand Size and Study Subjects

In the past two years, approximately two-thirds of the students in my studio have small or medium-small hands. I generally define "small" as being a hand that does not easily reach a tenth. This ratio of $\frac{2}{3}$ of the studio is not unusual when one realizes that, on average, female hands are smaller than male hands, and university surveys have shown female piano students outnumbering males eight-to-one.² Yet, if one were to look at the ratio of females to males winning major competitions, one sees a vastly smaller percentage of females.

The female hand is, on average, 15 percent smaller than the male hand. This statistic is very interesting when one realizes that that translates to female hands being generally $\frac{2}{3}$ the size of male hands. Of course, there are many males with small hands, but generally they are not as delicately boned as female hands.

The conventional keyboard is designed to fit the average large hand. It is interesting to compare my hands on the $\frac{2}{3}$ keyboard with my husband's large hands on the conventional. They are identical in relation to the keys. When playing the $\frac{2}{3}$ keyboard, it is clear I am replicating his experience on the conventional keyboard.

With so many small-handed pianists, it was not difficult to find enthusiasm in my studio for experimenting with the new keyboard. Students practiced particular repertoire and etudes on the keyboard and wrote notes about their experiences in our journal throughout the year.

How It Feels

One aspect students reported in our journal was how it felt to play the keyboard. Here are some of their initial comments:

“My overall feeling is comfort. My hands feel more secure and strong.”

“I could feel closer and more connected to the keys.”

“My hands feel good after practicing—not stretched.”

“I experienced less fatigue and strain on my hands and arms.”

“I am less tense throughout the arms and shoulders.”

“My stamina is improved—I’m not so easily tired.”

“On the conventional keyboard, the RH chords hurt my hand and I can’t play them quickly. On the $\frac{7}{8}$ keyboard, my hand is allowed to be in a comfortable position, making it possible for an accurate and safe landing. I am not as afraid to go for the chords.”

My own experience reflects that of the students. The quietness of the hand and its compactness contribute in a significant way to feelings of comfort, relaxation, security and more intimacy with the instrument.

Technical Differences

The $\frac{7}{8}$ keyboard contributes significantly to technical ease.

- ◆ The technical approach on the smaller keyboard involves smaller, more refined movements and less use of throwing, pivoting, rotating and generally “flying about.”
- ◆ Fingers are closer to the keys, and the wrists do not have to strain in a high position to afford more hand span.
- ◆ The hand does not need to constantly reposition itself. Fingerings marked by composers and editors finally make sense.
- ◆ Rolled chords and contrived pedalings to mask notes not being held manually are eliminated. Stretching and straining,

therefore, do not translate into shoulder and arm tension.

The students immediately discovered these benefits and wrote about them:

“My hand looks so natural—I now have a high, strong bridge.”

“I have eliminated excess movement.”

“I was able to reduce the amount of pivoting necessary.”

“The patterns fell naturally under my hand—no more stretching and leaping or looking up and down from the music to the keyboard.”

“I feel a whole new technique for this keyboard. I can get deep into the keys.”

“My wrist can be lower in large intervals.”

“I can use fingerings that I could not do on the conventional.”

“The higher range felt closer to my body so that I didn’t have to lean as far.”

“The $\frac{7}{8}$ allows me to keep my hand in a rounded supported position while playing octaves.”

“There’s so much I can actually do that I had to fake before.”

Injury Prevention

I would like to look at one case in particular to illustrate the impact on injury prevention. Three years ago, a freshman came to me with technique not developed enough for the rigors of becoming a performance major. In addition, her hands were quite small. I took her on with the hopes I would be able to accelerate her technical progress and help her with small-hand strategies. The student was very eager to improve and began to practice many hours. Unfortunately, in her eagerness, she would overpractice technical problems or practice them incorrectly during the week. As a result, she began to suffer injury.

In the second year, we revised her repertoire to include pieces that minimized any stretches or large chords. Still, she reported having to be continually vigilant about overpracticing to avoid pain. This became frustrating for me, since I am especially careful about teaching sound principles of technique that avoid injury.

In the third year, this student began to practice exclusively on the $\frac{7}{8}$ keyboard. Soon, she reported that her practice hours became joyful and satisfying; she was able to practice many hours without fatigue or pain and found her facility and strength

were increased dramatically. During her senior year, she returned to playing both keyboards and enjoys a natural and worry-free approach to practice.

Many students observed similar, if less dramatic, experiences.

More Effective Practice

My students and I have observed several positive timesaving changes in our practice techniques and learning abilities. Several of these delightful improvements are directly related to learning patterns.

- ◆ Because chords and figurations lie easily under the hand, sight reading, note learning and memorization all are improved or accelerated.
- ◆ Because the need to practice the technical aspects of a piece is decreased, there is extra time to devote to musical aspects or other repertoire.
- ◆ We can practice challenging passages for a longer period of time without tiring.
- ◆ We can concentrate on other passages rather than spending inordinate amounts of time just “getting the notes.”

This improved practice technique has resulted in many students choosing to learn their repertoire on the $\frac{7}{8}$ before moving to the conventional keyboard.

Musical Differences

The most noticeable musical improvement one is able to achieve on the $\frac{7}{8}$ keyboard is a beautiful legato. A natural legato profoundly affects many more elements. Besides musical line and phrasing, it improves texture. Additionally, a fine legato allows one to become less reliant on the pedal.

Power is second in importance in terms of musical improvement. A more compact hand is able to deliver more force, weight and speed than an extended hand. The pleasure of easily getting a large, warm sound, or a gutsy sound, is a new experience for most of us. Contrary to what many people have feared, then, the $\frac{7}{8}$ keyboard allows for *more* power, not less.

In addition, proper textures more easily are achieved by a compact hand, which can voice chords with better results than a stretched hand.

Experiences at Universities

During the past year, I have had the

interesting experience of visiting several universities with my keyboard/action. I either traveled with it in the back of my SUV, or put it in the airline's cargo. It isn't much different than traveling with a cello. I adjusted the keyboard according to measurements taken in advance, so when I arrived in the concert halls, the technician simply had to replace the existing action with mine.

Each time, my keyboard/action had a different "out of body" experience. It was fascinating for me and the faculty and students at each university to hear results of the blended instruments. From my perspective, the piano felt the same but sounded different. From their perspective, the piano sounded much the same but felt completely different.

Students were asked ahead of time to bring repertoire excerpts they found to be especially "stretchy" or uncomfortable. What a thrill to see the looks of joy and hope on the faces of the small-handed pianists as they looked up at their professors and peers. Essentially, what they were realizing is that the problem was not them, but a keyboard that didn't fit them. They left the piano with hope that their university might also acquire such a keyboard.

Small-handed males and females alike experienced improved facility. Interestingly, not only small-handed students and faculty enjoyed the keyboard. Some large-handed pianists played it with ease as well.

Challenges

This ongoing study has obviously been overwhelmingly positive in favor of the use of the $\frac{7}{8}$ keyboard. However, there are some challenges:

Thick fingertips

Some small-handed pianists with especially thick fingertips have found that the $\frac{7}{8}$ keyboard does not afford enough room between the black keys. For these pianists and for those with a medium-sized hand, a $\frac{1}{2}$ keyboard, with a 6-inch octave, is a more practical choice.

Availability issues

Patience is required for the early adopter, for I believe it is only a matter of time before we see the proliferation of the reduced-size keyboard option in our universities and concert halls. With the invention of the transportable keyboard,

pianists may own their keyboards, which can be installed in any piano of a given make and model. In addition, they may take their keyboard to other locations and place it in pianos of like make and model. It also is possible to lease a keyboard for an event. In that case, the builder ships a piano keyboard/action to a concert destination.

Cost issues

One option for families with children studying piano is to purchase uprights with the reduced keyboard and trade up later, as is done with different size violins. Private teachers have the options of either (1) purchasing a $\frac{7}{8}$ upright for their studio, (2) purchasing an alternate keyboard/action for their grand piano or (3) purchasing an inexpensive grand piano in need of reconditioning, with the intention of replacing its old keyboard/action with a new $\frac{7}{8}$ action.

Universities often can receive grants for purchasing alternate keyboards. Steinbuhler and Company offers lease options as well. College students must rely on universities if they cannot afford to purchase their own.

Traveling

Traveling with one's own keyboard and action has both advantages and disadvantages. Pianists would be transporting seventy-five pounds, but on the other hand, they have the luxury of performing on the keyboard and action they are accustomed to.

Attitudes

It takes time for attitudes to change. For some reason, a few pianists approach this subject with fear. Perhaps they believe playing the smaller keyboard will somehow "mess up" their piano technique. However, as we have observed, it actually enhances technique.

Perhaps they believe the conventional keyboard size is somehow "sacred." If authenticity is the desire, then a truer recreation of the composer's experience of the music would be one in which one's hands feel more like the composer's. Keyboard size has never been completely standardized. Modern piano keyboards can vary up to $\frac{3}{8}$ of an inch in overall length. More importantly, many do not realize that just a decade ago, Steinway & Sons actually increased the width of its keys!

For those of us sensitive to the difference, this is a terrible disappointment.

Some have mentioned the term "cheating." On the contrary, I would suggest that the reduced-sized keyboard finally evens the playing field. Until now, the combination of small and delicately boned hands is seen only rarely in first-class performing artists. Those at that level must possess truly extraordinary facility, flexibility and coordination to overcome the difficulties.

Future

Ideally, in the future we will see concert halls whose pianos have alternate keyboards. Many manufacturers will offer both uprights and grands with smaller keyboards. Teachers will own small keyboards to interchange with their conventional ones. Competitions will offer the possibility to use the keyboards.

Today, precollege teachers and independent music schools need to conduct studies of the benefits to children using these keyboards. It is easy to envision young prodigies playing Rachmaninoff and Liszt, but the average child could enjoy learning on a more appropriately sized instrument. One of the most frequently asked questions from teachers of children involves repertoire choices for those students who cannot yet reach an octave, but are ready for more challenging repertoire.

In a world of $\frac{7}{8}$ stringed instruments, various-sized tennis rackets, baseball bats, rings, clothing, shoes, hats, prescription glasses, golf clubs and so on, surely we realize that one size does *not* fit all.

Based on this study, I wholeheartedly encourage all pianists to promote the adoption of an alternate size standard by all piano manufacturers.

After forty years of playing the conventional keyboard, my choice is now to perform on the $\frac{7}{8}$ keyboard. Given the ability to play the $\frac{7}{8}$ keyboard whenever and wherever they desired, I believe a high percentage of pianists also would make this choice.

AMT

NOTES

1. www.steinbuhler.com.
2. Christopher Donison. "Small Hands? Try This Keyboard, You'll Like It," *Piano & Keyboard*, (July/August 1998): 41-43.