Journal

of the Lute Society of America

Douglas Alton Smith
Editor

Patrick O'Brien
Talking to Students about His Former Disability and an Excerpt from The Hand

Elanor O'Brien, Katharyn Benessa, Alice Artzt, Jason Priset, Greg Chako, Daniel Rindler, Douglas James, Antonio Madigan, Brian Hays, and Jack Silver
Remembering Patrick O'Brien

Volumes XLIX–L ISSN 0076-1526 2016–2017

Journal of the Lute Society of America

Volumes XLIX–L 2016–2017

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The *Journal* welcomes contributions of scholarly merit and correspondence dealing with issues raised within its pages. Authors should submit MS Word files of their articles and are urged to contact the editor for formatting guidelines. Musical examples should be submitted on separate pages with captions exactly as they are to appear in the article. Camera-ready musical examples are also encouraged, but authors should consult with the editor in order to ensure uniformity throughout the volume. Professionally produced, high-quality photographs (preferrably digital) should be submitted for all plates. For matters of style, the *Journal* generally follows the *Chicago Manual of Style*, 16th edition (2010). Articles, correspondence, or queries should be addressed to John Griffiths at jagrif@me.com.

About our Contributors

Alice Artzt, whom *Guitar International Magazine* has called "America's best player," has been acclaimed by critics in Europe, Asia, Africa, Australia, and the Americas for her performances as a soloist, in concertos with orchestra, and in chamber music groups. She studied guitar with Julian Bream, Ida Presti, and Alexandre Lagoya, and composition with Darius Milhaud at Aspen, Colorado, and at Columbia University, where she received a degree in musicology. Alice has made 13 solo recordings, has written two books on guitar technique as well as numerous articles on music, and has several instructional videos on YouTube.

Katharyn Benessa recently completed the requirements for a Doctor of Arts from the University of Northern Colorado with her dissertation "Secular Song of the Spanish Renaissance: Portrayals of Moors and Christians during the Reign of Isabel and Fernando, the Reconquest, and the First Morisco Rebellion." Her reward was a trip to England to pick up a vihuela and a French baroque guitar built by Alexander Batov. Her article is dedicated to her friend and mentor, Douglas Alton Smith.

In a career spanning 30 years and five countries, Cincinnati-born jazz guitarist and educator **Greg Chako** has led an entrepreneurial life in the music business, much of which occurred while he lived and worked throughout the Far East, most notably in Singapore. He has released 10 CDs, four videos, and been the subject of a documentary, *An American Cat in the Lion City*. His recordings feature syncopated rhythms, soulful melodies, hard-swinging jazz, and exotic percussion.

After 30 years as cofounder and lead developer of law office software for Abacus Data Systems, Inc., **Brian Hays** stays busy playing music, using Sibelius to engrave friends' arrangements for publication, and supporting dystonia research. He welcomes contact and can be reached at bhays@abacuslaw.com.

Douglas James is professor of guitar at Appalachian State University, where he teaches classical guitar and directs the Appalachian GuitarFest and Competition. With a performing career spanning almost four decades, he frequently concertizes as a soloist and in ensemble with the Rucco-James Duo (19th-century guitars) and Corde Cantanti (theorbo). He has served on the board of trustees and chaired the advisory board of the Guitar Foundation of America.

Elanor O'Brien left her native Brooklyn, New York, in search of the good life, and found it at Persephone Farm, near Lebanon, Oregon. Elanor and her partner Jeff Falen raise 14 acres of certified organic vegetables, including the grand broccolis to which Pat O'Brien often referred. Persephone Farm hopes to help create a more sustainable agriculture through attention to soil health, renewable energy, and training future farmers (www.persephonefarmoregon.com).

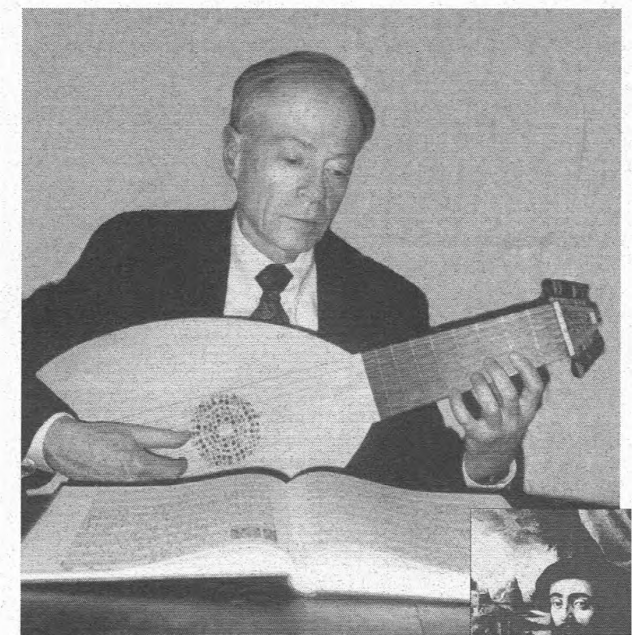
Jason Priset holds degrees from the State University of New York at Fredonia (BM) and Stony Brook University (MM, DMA). He is a regular performer on lutes and guitars in the United States and abroad, and is currently on the faculty at Montclair State University and the Amherst Early Music Festival. Jason also is director of the Lute Society of America's Summer Festival.

Daniel Rindler is a Guild-certified Feldenkrais practitioner based in Brooklyn, New York, who studied lute, theorbo, and baroque guitar with Pat O'Brien for nearly a decade. Studying with Pat prepared him to go on to complete a degree in early music performance practice at Indiana University, Bloomington. Dan sees musicians and performing artists in his private Feldenkrais practice, and also teaches Feldenkrais method at the Yale University Norfolk Chamber Music Festival.

Holder of a Premier Prix in guitar performance from the Conservatoire National in Nice, France, and a PhD in English literature from York University, **Jack Silver** has written several books and many articles on various musical and literary subjects. He is project leader of the DOREMI record company's "Segovia and His Contemporaries" series, and is currently writing a biography of the Brazilian singer-guitarist Olga Praguer Coelho.

In Memoriam:
Douglas Alton Smith (1944-2018)

After a long illness, Douglas Alton Smith died at his home on August 9. Over the decades Doug made numerous contributions to the Lute Society of America in a variety of roles, most recently as a member of the board of directors and as guest editor and senior consulting editor of the *Journal of the LSA*.



Doug received his PhD in music from Stanford University in 1977. His dissertation, "The Late Sonatas of Silvius Leopold Weiss," could be considered the starting point of modern lute players' fascination with Weiss and the baroque lute. Doug also was the original editor of *Sylvius Leopold Weiss, 1686-1750, Complete Works for Lute*, an edition sponsored by the Musikgeschichtliche Kommission, with further support in the form of research grants from the Alexander Humboldt Stiftung, the Leverhulme Trust, and King's College London.

Doug's contributions to lute scholarship cannot be overstated. He published numerous articles in the *Journal of the Lute Society of America*, the *Journal of the American Musicological Society*, *Early Music*, *Le Luth et sa Musique*, the *Galpin Society Journal*, and *The New Harvard Dictionary of Music* on topics as varied as Matthäus Waissel's instructions of how to play the lute to the chitarrone and the 13-course ba-

roque lute. In 1976 he published a translation of Ernst Gottlieb Baron's *Study of the Lute (1727)*.

The book that most people will remember Doug for is *The History of the Lute from Antiquity to the Renaissance* (LSA, 2002), which remains the only book of its kind. He was often asked if he was going to write Volume II on the baroque lute, and his answer was always that someone else should take on that project.

Doug's many other projects were not all lute related. Those included writing restaurant reviews for his local newspaper, some of which were later turned into the book *The Midpeninsula Scotch Gourmet: The Frugal Epicure's Guide to Eating and Drinking on the Lower San Francisco Peninsula*. He was interested in playing folk guitar, a project that expanded into the composing of a folk opera, which he only recently finished. Doug also spearheaded the four *JLSA* issues devoted to the life and work of Patrick O'Brien (Volumes 47 through 50). Volume 52 of the *JLSA* will be a festschrift in memory of Doug.

In tribute to Doug, the LSA has created the Douglas A. Smith Scholarship, which will pay for a lute student to attend one of our festivals. You might also consider a donation in Doug's memory to the society's digital lute music library, a project that was dear to Doug's heart. But perhaps the best way to remember Doug is to purchase a copy of *The History of the Lute*, which is available on the society's website. (If you already have one, why not pick up another copy and donate it to your library?)

Doug will be missed, but warmly remembered.

Biographical Introduction

By Elanor O'Brien

One of the things I miss most about my father is that I can no longer call him up and ask him a question. I think most people who knew Pat are familiar with this phenomenon: one could call him, anytime, and ask any question, on any subject in the world. And he would answer. At length. Even if his answer was a guess, it was a pretty informed guess. It made sense. So, what to do with all the questions I have for him now?

Douglas Alton Smith, in his tireless efforts to produce several memorial issues of the *Journal* dedicated to Pat's teachings, had a suggestion for me: ask friends and family of Pat who may recall what Pat himself said to them. In particular, Doug's wish was to learn more about Pat's own experience with tendinitis, which inspired Pat to develop ways of teaching guitar technique to players for better hand health. So I began an informal research project.

Everyone with whom I spoke noted that Pat didn't talk much about his own hand issues. Dr. Frank Wilson said of Pat, "He alluded to it, then he moved on." My impression is that Pat was more interested in learning about the way to teach each individual player, now, in the present moment, how to heal, than in revisiting his own past issues. My Dad was a pretty present-moment kind of guy. And who among us is very enthused to revisit a painful experience in our lives?

Many of us know a little something about how Pat came to decide how to treat himself after developing hand problems. I heard him say that part of his reason for taking on the job himself originated in his working-class, Catholic upbringing. "I was taught to say, 'mea culpa,' it's my fault, it's my problem, and it's my responsibility to find a way out of it," Pat said. Pat also quoted his father as saying, "Allergies and divorces are for rich people; we can't afford them." So in his family one would be less likely to consult an outside "expert" to solve one's problems. The idea of outsourcing this important job seemed impractical, expensive, and beside the point. "I'll figure my way through this." Pat knew there was something about a modern classical guitar

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technique he had learned that must have been wrong, because it was hurting his hand. He could sense the origin of the problem, and chose to approach it directly rather than to operate through a middleman.

Not to mention the fact that the remedies recommended by middlemen seemed questionable. One of the "solutions" recommended by physicians was steroid injections to reduce inflammation in the hands. Pat recognized that this would reduce his pain, but by removing the symptom of pain, he would no longer be able to discern what motions he was using that were harmful and hurtful. So much for steroids.

Another option recommended was surgery . . . again, expensive, but also, if a player persisted in a harmful technique after the surgery, how would the problem be solved? Yet another recommendation was to rest and not play for a while. But once playing resumed, where was the proper technique he needed to play well and in good health? So much for experts.

The rest of the story is familiar to many. Pat chose to educate himself about the anatomy of the hand and the proper mechanics for play. And, to quote my Mother, "Once he saw that he could help himself out of this problem, he decided he should try to help others do it too." Those of us who knew Pat know that his capacity for learning was vast. Owen Middleton, a composer and guitarist who met Pat when they were both teachers at the Hoff-Barthelson School of Music in Scarsdale, NY, said, "It wasn't anything that he had to work at. He had a determination to dig out all that information because it was so important to him." But when it came to training himself, "He [Pat] was a tireless worker, he practiced all the time, he soaked up all that information, and he never forgot anything he learned."

So I haven't enlightened anyone with any new information concerning Pat's hand problems. What little he said about them, he said openly, so it is pretty common knowledge. But still I am grateful to Doug for encouraging me in this project. I got to talk with old friends and with family about my Dad. What could be better? I may not have learned anything new or surprising about Pat's tendinitis, but I learned that the Back Alley Boys, a bluegrass band in which Pat played with friends in high school, played to five thousand people at the Flushing Pavilion at the 1965 World's Fair. I learned that the band had gigs all over New York City almost every weekend. I learned where Pat bought his first lute, used, from Bellmore Music on Long Island. From one of Pat's lectures that Doug transcribed, a story of my four-year-old self, asking my father a question, greets me today. One

of our friends still wears a scarf Pat wove for him. I treasure all of these living connections to my father.

The poet Jim Wrathall said, "They say that every time someone dies, a library burns down." I am grateful to everyone who has been working to preserve Pat O'Brien's library of work for future generations of players. This is exactly what he would have wanted.

With much love and appreciation,
Elanor O'Brien

Patrick O'Brien and His Own Former Disability

By Patrick O'Brien

Transcribed and edited by Douglas Alton Smith

Editor's Introduction

In the late 1960s Patrick was disabled by tendinitis pain for about two years, to the point where he could not play at all. Probably this primarily affected his right hand. He tended not to speak about it later, regrettably, because the story of how he cured himself would be both remarkable and instructive. He consulted doctors, teachers, anybody who could help, but found little solace.

Apparently at one point he took night classes in anatomy and physiology to learn how the hands function, and what he learned became the basis of all his future pedagogy, not only his cure.

When word got out that he had cured himself, other musicians with hand injuries began to come to him for help, and his big heart could not turn them away though he would have preferred to teach musical interpretation. Over his 40-odd-year teaching career he must have seen hundreds of hand patients, perhaps thousands. He referred some of them to Jack Silver in Toronto, in whom he had confidence because of Jack's own cure and understanding of the issues (see Jack's article on page 141). He was frustrated that he could not help or cure all of them. He told one student that he cured perhaps 25 percent. Katharyn Benessa has written in this volume why he was not always successful despite the essential efficacy of his system. Some people simply did not follow directions, wanting to keep trying their own solutions. Others came briefly and then disappeared with no further contact, so the teacher had no idea how or if they progressed.

Still, there is surely no teacher in the history of music who has helped more musicians recover from hand injury. If so, it is undocumented. Neurology journal articles on the subject are uncertain about the origin of hand injury, and usually conclude that the success rate is low. Well, of course it is low if you are not treating the cause. Neurologists turn to MRI brain studies, but these do not indicate whether the images are the chicken or the egg.

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Patrick knew the cause and the underlying anatomical reasons: faulty plucked-string technique. He eventually isolated a few prime causes and focused on those, foremost among them distal flexion (bending the fingertip joint), excessive abduction (spreading the fingers, primarily of the left hand), and to a lesser degree excessive opposition or gripping with the left-hand thumb and little finger, which creates tension, as does abduction. Knowing these factors, and closely observing how the students played, he could create exercises to retrain musicians to avoid the problem motions and ultimately restore their playing ability.

Here are brief explanations by Pat to two of his students, Steve Forsley and Daniel Rindler (see his article on page 49), and an unidentified student.

Daniel Rindler – transcribed from a recorded interview with the *JLSA*

When Pat was a young man, he was a working musician, playing gigs constantly to make a living, and he began to have debilitating hand pain that threatened his career. He had studied with a teacher who had helped him progress musically, but who didn't teach any kind of consistent technique. At this difficult time of his life, not finding the answers he needed from teachers, he took matters into his own hands. As he told the story to me, he spent months playing in front of a mirror, trying different small experiments of technique, often while in severe pain, making note of which movements felt better and which felt worse. He studied anatomy and began to understand the inner workings of the hands and arms.

But Pat didn't solve his hand problems completely alone. He began to reach out to others in order to research ideas that might help him. He began to seek out and speak to older musicians who were still playing at a high level of proficiency late in their careers. He spoke to jazz and pop players, classical musicians, and folk musicians who played traditional music at weddings for hours on end. His question for them all was a brilliant one: "What did you find you needed to change in your technique as you got older, in order to keep playing with the proficiency you have now?" He even managed to ask this of Andrés Segovia, who held up his right hand and said, "I had to do a lot more of this," bending his finger as if to pluck a string at the base joint and the middle joint, but not flexing at the tip joint, which remained passive, like a soft paintbrush would when brushed across a canvas. This particular movement of the fingers was one that came up again and again as Pat spoke to various musicians and became a central part of his technique.

Steve Forsley – transcribed from a recorded conversation with Pat O'Brien

PATRICK O'BRIEN: I have a tendency to manipulate from here and there [pointing], and not to grip this way. That's the way I use my hand, because I went through so much pain, I mean, I'm talking just unbelievable depression. [Laughing as he talks] Even now, my wife won't admit when I ask her point blank in front of other people, she won't admit how bad I was to live with at that time. I must have been unbelievable to put up with.

STEVE FORSLEY: What year was this?

O'BRIEN: I guess it was in the late '60s, somewhere. I was into this problem really badly for a couple years when I finally found the last trigger that I needed, which had to do with relaxing the tip of the thumb. And making that happen all the time as I plucked and as a posture and so on and so forth it took me only a few months to get the problem gone. And oh, inside of four or five months, after I just thought of that final idea, I was back playing again.

It was ironic because there had been times during those two years that I stopped, did nothing with my hand for like a couple months. Put it in a sock and tried not to move it at all. And it didn't get particularly better, it still hurt. I had to train my way out of it, I couldn't just relax my way out because I had forgotten how. I had just forgotten. And the very way I maneuvered my muscles and talked to them and how I triggered them, you know, I had forgotten how to do it.

Patrick O'Brien's response to a question from an unidentified student

O'BRIEN: But I wouldn't hook the tip of my finger for nothing. Why? Well, I had this wonderful motivation when I had this tendinitis problem about 25 years ago. The chronic pain lasted a couple of years. It was really painful. I would wake up out of a sound sleep as I moved my hand in my sleep. It hurt so much. One of the tendencies of tendinitis is that when they're inflamed, they adhere when you don't move them. If you're asleep, then fum! The first time when you wake up they hurt like hell. When you get some movement, they hurt less because you break down some of the adhesions that happen during the time of immobility.

What I had was a situation where if I did it wrong, it hurt like hell, and if I did it a little bit better or right, it hurt less. And that really was a strong motivation for me to change my whole way of moving my hands.

Excerpt from *The Hand*[1]

By Patrick O'Brien

When I was in the third grade I had the measles. It was the first time and the only time I was ever out of school for three whole days. Someone gave me one of those puzzles of holes in a wooden board the shape of a cross. There were pegs to be moved around: all of the pegs were red except one, which was blue, and you had to figure out how to move them so that the blue one would end up in the middle. I spent about two-and-a-half days solving that puzzle. When I was a little older, I played billiards. I was fascinated by puzzles and games that require repetition and careful development and a certain kind of concentration, and drawn to any skill I could slowly think out and work out. I wasn't always sure I could handle the world improvisationally, and working on problems of this kind created a safe place for me to be.

Even as an adult the problems and puzzles I enjoy always seem to relate to things I can analyze and work out through repetition—something I can gradually come to control. Juggling is an example, and so is sleight-of-hand. There is a particular emotional element involved in this kind of work, a way of perceiving things and a need to predict what's going to happen next. It's a very little world—in your hands. Whatever you can do with your hands gives you a small world that you can actually cope with, as opposed to the big world, where perhaps you can't. I think this interest in small things explains my habit of observing people in a certain way. I am sure my sensitivity to outcomes has to do with being very insecure and easily intimidated as a kid. That feeling leads you to watch other people's faces carefully as you speak to them. My father was a machinist who worked for Sperry Rand making parts for gyroscopes. He valued precision both in process and in making tools, and I'm sure I have something of a sense of craft from his outlook. He was very laconic and, in the way of the Irish, completely undemonstrative. My mother was

[1] Frank R. Wilson, *The Hand* (New York: Random House, 1998), pp. 219-23. Reprinted by permission.

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born here and was a mix of Italian, Sicilian, and Neapolitan. She was very expressive, very immediate in her reactions, very emotional; she was the antithesis of my father.

As a child I heard music constantly. My first contact with an instrument was when I was a tiny kid in school; we played little plastic flutes, but from the beginning I was determined to play correctly. One cousin of mine—we were almost exact contemporaries and were always together as little kids—saw me playing a plastic flute in the first grade and immediately fell all over himself laughing at me. I addressed myself physically to this toy instrument as though I were a professional, and that was hilarious to him.

I began playing guitar sometime thereafter. I was self-taught and don't really remember the chronology very well. Somewhere around the age of seven I had saved some money delivering papers for my brother, and used it to buy a cheap guitar. I found books that taught chords and I copied things off records. I was doing this for a long time before I learned to read music. I actually was playing for a long, long time professionally—I made a good deal of money at it—before I read music.

In high school I bought a classical guitar because I was interested in South American jazz—bossa nova, originally a highly political idiom and politically a protest music that I was interested in. So I bought some books, thinking I would learn something about playing with my fingers—before that I had played with a pick, mostly playing chords.

The transition from pick to fingers is not a small thing, and it is a process I began to understand much better after I began to play the lute. When you play the lute, you don't use your nails. In fact, you still want to use your gut strings if you can. The whole process involves getting closer physically to the control of the string without any intermediary. Not the hard, stiff insensitivity of a pick, not the steel strings, not an amplifier, not even your fingernails. As I was getting closer to a feeling of touch, I found a particular satisfaction in being closer to the string, feeling more input from the string, being able to articulate more and more carefully from the right side of the instrument.

The first and only teacher I ever had was a well-known player I went to when I was going to Brooklyn College. He himself had studied with an old Russian named Alexander Bellow, who had been a pianist, an arranger, and a conductor. My teacher had a specific way of going at the strings, which didn't work out very well for me—it just wasn't a very good technique for what I wanted to do. Eventually I had to leave the technique behind but I did so in bits and pieces. Some of the things he had given me simply blew up in my hand in the late sixties. That was when

I began to play more and more adventurous modern literature, which often is not composed for the guitar and doesn't fit on it very gracefully.

As I started to push my playing, my hand started to hurt constantly, particularly what we call the "a" finger—the ring finger of my right hand. Rather quickly, I developed a *gigantic* tendinitis. So there I was with my hand problem. I began to ask people questions; I called up doctors, therapists, chiropractors, all the musicians I could think of, and no one seemed to know what this was. In fact, no one even said the word "tendinitis" to me.

A few people said to stop playing for a while, and I tried that. It didn't help. I just went through an awful time, thinking I wasn't going to be able to play or teach any more. Eventually I began to see a way out of it. I did work my way out of it, but it took me a couple of years to do.

The whole time was strangely like being eight years old again, sitting in bed with the measles, fiddling with that peg game day after day. I just worked it out, alone in my room, quietly by myself. Finally I found a way of playing which made my hand hurt less. And the change gave me a better tone. It gave me, eventually, more speed, more power, and much more independence between the different fingers in plucking. The repair job gradually coalesced into a systematic way of approaching the instrument, but I have only recently had any idea what's underneath the change: it comes down to avoiding unnecessary distal flexion in the fingers. That was a habit which I had gotten into, and it was a costly one because of the pattern of sustained repetitive cocontraction I had fallen into. I still just barely have a sense of what *that's* about.

I think that the predisposition to handle the problem as I did comes in part out of my background. I was brought up in the Roman Catholic Church, and I had a father who would say "allergies and divorces are for rich people," and we couldn't afford them. What he meant was that you had to solve your own problems. You had to analyze what was going wrong yourself, then figure out how to deal with it, or just cope with it. Every week when you're a little altar boy in the church, in the days when I went to church, you said: "Mea culpa, mea culpa, mea maxima culpa." You really assimilated the idea of personal responsibility; *you* had done something wrong and there were consequences. So I was ready, when I began to see my hand hurting, to accept that I had done something wrong, and that is why it hurt.

The pain actually helped me in an odd way, I could *feel* every day whether I was doing the right thing or not, because my hand would feel better or worse. Merely stopping playing didn't help. I stopped for a month; I didn't use my hand for *anything* for a couple months at one

point, and it still hurt like hell. When I did finally solve the problem I had no idea how I had done it—I hadn't even a theory. Of course theories are *all* I have now, but for a long time I had only the most naïve concept of what I was doing.

A considerable part of my work now involves helping injured musicians. The players with the most severe problems usually require changes of technique, changes in the way individual fingers are used, and a very slow, careful imprinting of an entirely new pattern of motion in the hand. In the process of working *that* slowly, evaluating everything *that* carefully, listening to the tone of each individual note, just watching the finger move slowly, the injured player will have to begin to change *as a person.*

They have to let go of a certain kind of goal orientation which has always told them to grip and grab everything as hard as they can, to get ahead in their career. It is as if a misguided life metaphor is visited on them in their hand. And they *have* to change. Whereas previously perhaps they dashed their way through things—approximating—they now have to begin to think about *every* motion. And they must develop a very, *very* refined sensitivity to what their body feels every time they move it. They have to learn to completely relax between notes, which of course they may never have done before in their lives. Perhaps they have never done that with any part of their personality, in anything they do. They move as fast as they can, play as fast as they can, and set the metronome up a notch arbitrarily, once every day, force-feeding themselves the instrument.

They have to let all of that go. They may even have to say, "I don't care if I never play a concert again; I just want to be able to *play* again." There's something really profound about that, forsaking the goal of winning a competition, getting into a certain conservatory, playing better than the guy down the street, whatever it is. They have to be able to say, "I want to do it, even if only privately, for myself. I'd like to be able to play something simple." These are almost universally people who would *never* have said that before. They have to stop *driving*. Some people just can't make that change.

Having acquired a particular combination of insights—the ability to see into problems in technique—would not necessarily give you the empathy you need to work with other musicians with problems. I went through so much pain in my own situation, such a terrible crisis, wondering whether I was going to be able to play again—what would I do with my life if I couldn't play? There was nothing else I wanted to do as much as I wanted to play the guitar. That gave me considerable empathy for other injured musicians.

What Factors Determine Success or Failure in Treating Musician Hand Injury?

By Katharyn R. Benessa

Several years ago I began writing about my experience with the musician's repetitive stress injury focal dystonia and my subsequent rehabilitation with Patrick O'Brien's assistance. As a result of my online articles, approximately 40 people from around the world shared with me their thoughts and stories as they battled focal dystonia, with roughly half of them requesting additional advice or lessons. These musicians range from intermediate and advanced amateurs to working professionals. Many are classical guitarists, like myself, with focal dystonia affecting their right hand, while others include electric guitarists who play using a flat pick, and those whose dystonia is in the left (or fretting) hand. Furthermore, I heard from a trumpet player with focal dystonia in his right hand, and a Persian tar player. Consequently, I have developed insights through my experiences in attempting to impart O'Brien's techniques to these musicians.

O'Brien shares his own story with musician's injury, recovery, and guiding others in a passage in *The Hand* by Frank Wilson, M.D.[1] While recently rereading this excerpt, I found that O'Brien addressed many of the questions and issues I encountered in trying to communicate his ideas to others. Through his words I have a better grasp of why O'Brien's exercises worked so well for me, and why sharing that knowledge has not been as straightforward as I had hoped or expected. I will use O'Brien's words (in italics) from the aforementioned passage as a springboard for my own insights.

On Pain as Feedback

The pain actually helped me in an odd way. I could feel every day whether I was doing the right thing or not, because my hand would feel better or worse. Merely stopping playing didn't help. I stopped for a month; I didn't use my hand for anything for a couple months at one point, and it still hurt like hell.

[1] Frank Wilson, *The Hand* (New York: Vintage Books, 1998), pp. 219–23 and pp. 9-12 this volume.

JLSA XLIX–L (2016–2017)
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O'Brien developed tendinitis, which causes great pain when executing the motion that caused it. It is not wholly surprising that in overcoming this disability, he was able to construct a method to help fellow tendinitis sufferers, but it does not naturally follow how he was able to successfully transfer this approach to musicians with focal dystonia.

The foremost reason for the success of his approach with varying injuries is the result of developing a playing technique based on a comprehensive knowledge of the anatomy of the hand: this knowledge can be applied to all musicians, with or without injuries. One radical difference between tendinitis and focal dystonia is that the latter is known for having no (or infrequent) association with pain. Therefore, it would seem that those who suffer from focal dystonia would not have the advantage—if you could call it that—of pain as a tool for feedback for proper movement. With this drawback, it might appear that those with focal dystonia would have no hope of technical retraining. Not only is that not the case, but it is an issue that O'Brien was able to address.

Significantly, one commonality exists between focal dystonia and tendinitis: ceasing to play has no effect on reducing the symptoms. As O'Brien discovered, and as I continue to learn, establishing correct movement is the only way to reduce or eliminate symptoms of the disorder.

Theory versus Practice

When I did finally solve the problem I had no idea how I had done it—I hadn't even a theory. Of course, theories are all I have now, but for a long time I had only the most naïve concept of what I was doing.

While searching for relief from my injury, I learned only a few anatomical terms for the hand and arm. Most literature on the subject of focal dystonia aimed specifically at musicians limits the use of medical terminology (obviously this does not apply within the neurology field, where articles on focal dystonia appear in numerous journals). In contrast, O'Brien studied anatomy in-depth during the process of developing his method, and accordingly was comfortable with anatomical terminology. Nevertheless, in our private sessions he used these terms minimally.

O'Brien's instructions to me were movement-based, instead of scientific descriptions: rather than explain, he demonstrated. His exercises worked, but I had little understanding as to why: as O'Brien himself wrote, "I had no idea how I had done it." What I did have was his

conviction and assurance supporting me. Now, when reading about his approach in Douglas Alton Smith's transcribed lessons[2] and in the footnotes of *The Hand*,[3] I comprehend more thoroughly the theory behind the proper movements I was learning.

The remainder of the excerpt from *The Hand* addresses the criteria necessary for successful retraining.

The Feeling Component: Developing Sensitivity

A considerable part of my work now involves helping injured musicians. The players with the most severe problems usually require changes of technique, changes in the way individual fingers are used, and a very slow, careful imprinting of an entirely new pattern of motion in the hand. In the process of working that slowly, evaluating everything that carefully, listening to the tone of each individual note, just watching the finger move slowly, the injured player will have to begin to change as a person.

This rich passage contains several significant insights. In prescribing a "very slow, careful imprinting of an entirely new pattern," O'Brien refers to a complete change in the way of movement. The "imprinting" occurs not only in the hand (often called "muscle memory") but also in the brain. Imprinting, then, is a result of "evaluating everything . . . carefully." This is the point where musicians with focal dystonia must develop a different system for feedback. Rather than relying on pain to identify faulty movement (as in tendinitis), feedback must first be based upon reducing the signature tremor, shake, or wobble that is characteristic of focal dystonia, and gradually replacing it with increased clarity and looseness of movement. This can only be accomplished by sustained attention to the feeling of every degree of movement.

O'Brien's exercises create intent through one careful, evaluated stroke at a time. In my case, I could imagine that I had sent tiny, satellite brains down to the tip of each finger and relied on their feedback for further movement. This sensory feedback informed me of correct movement. I learned exactly how my hand should be moving and what the fulcrum is. I would always return to intent. To simply play through the exercises without continuously evaluating the sensation of the fingers renders the work ineffective and pointless. It was this ever-increasing

[2] Patrick O'Brien, "Lessons with Patrick O'Brien," ed. Douglas Alton Smith, *Journal of the Lute Society of America*, 47 (2014), 4–73.
[3] Wilson, 357–59.

sensitivity that I continued to call upon as I progressed to more difficult techniques and elusive passages.

Because our sessions occurred during an intense, but short, lute seminar, I had very little focal dystonia-related lesson time with O'Brien. We had a couple of 15- to 30-minute discussions about movement, and he demonstrated exercises away from the guitar. We had only one real lesson, with guitar in hand. Moreover, I did not start working on the material until returning home a few days later. When I did, improvement was felt immediately and was immediately convincing. To clarify "immediately," I must stress I was not instantly "cured" and the focal dystonia did not simply disappear. Immediate success was felt in a sudden awareness of the differing levels of symptoms in each finger. Before, what had seemed like a highly confused hand loaded with dystonic symptoms—all fingers and thumb radically affected—was now distinct and isolated levels of clarity (or lack thereof) of movement for each finger. I discovered, by close attention to sensation, that the middle finger was the only dystonic one, and the others—the index, ring, pinky, and the highly impaired thumb—were all exhibiting compensatory, or helping movements. In daily practice sessions, awareness of the movement of each finger increased, and minute increments of tremor and resistance decreased, as my careful evaluation of movement gradually untangled confused impulses.

Within 10 days I was able to experiment with playing pieces, including those with problematic techniques such as arpeggios and tremolos, although I knew by sensory feedback that there were plenty of dystonic symptoms left to untangle. For this reason, I was not enticed to jump solely to repertoire, but returned to O'Brien's exercises to slowly rebuild skills with new movement patterns. The refinement of movement sensitivity is ongoing and continues to be a part of my regular practice. This is the reason I stress to students dealing with focal dystonia that O'Brien's exercises are not meant to be mastered and then discarded, but used as a pathway for long-term improvement. I can now instantly feel when movement is not clear even if my playing has not been hindered. In this way, I prevent dystonic symptoms from accruing over the course of a practice session.

To Change as a Person

They have to let go of a certain kind of goal orientation which has always told them to grip and grab everything as hard as they can, to get ahead in their career. It is as if a misguided life metaphor is visited on them in their

hand. And they have to change. Whereas previously perhaps they dashed their way through things—approximating—they now have to begin to think about every motion. And they must develop a very, very refined sensitivity to what their body feels every time they move it. They have to learn to completely relax between notes, which of course they may never have done before in their lives. Perhaps they have never done that with any part of their personality, in anything they do. They move as fast as they can, play as fast as they can, and turn the metronome up a notch arbitrarily, once every day, force-feeding themselves the instrument.

Even O'Brien knew his program would not work for everyone. The reason for that does not lie in the approach, technique, or theory of it, but in the personality traits of the musician. It is unfortunate and ironic that the habits and personality type that made one a good musician may not help with retraining, but instead may constitute an impediment.

I often wondered why O'Brien's exercises worked so well for me and not for others. I believe the reason is, in part, because I came to those exercises with a tabula rasa, a beginner's mind, which I maintained even as symptoms subsided. I let go of all the previous retraining theories I had tried or heard. But I also had to let go of lingering ideas I had about my playing and what I considered my best features: a strong, powerful stroke and an attractive tone. I never thought I was employing a grip-and-grab technique, but I came to realize that in several subtle ways, I was. Resistance to this "letting go" of what you think constitutes good technique, and of who you think you are as a player, are the largest barriers to overcome for successful retraining.

They have to let all of that go. They may even have to say, "I don't care if I never play a concert again; I just want to be able to play again." There's something really profound about that, forsaking the goal of winning a competition, getting into a conservatory, playing better than the guy down the street, whatever it is. They have to be able to say, "I want to do it, even if only privately, for myself. I'd like to be able to play something simple." These are almost universally people who would never have said that before. They have to stop driving. Some people just can't make that change.

After experiencing marked success in my own case, I was eager to share everything I learned with the focal dystonia community. Looking for the best way to disseminate the information broadly, I posted the material on a website that I created, including detailed explanations of O'Brien's exercises with accompanying video demonstrations, and a

projected timeline for improvement. I sincerely believed that if I put the information out there, people would immediately understand the system and could retrain themselves. Naïvely, I believed that if the information was properly presented, there was no real need for lessons.

While I heard from about two dozen people who let me know that they were experiencing some improvements, and whose questions often led me to creating new videos, I did not hear of anyone who had experienced my level of recovery. I am now beginning to identify the possible reasons for this lack of success.

First, I could not control how a musician might apply the materials I had posted. Even when I received positive reports, I could tell by the comments that they had not bothered to read much (or any) of the accompanying material, which was crucial for establishing what level of feeling was required before progressing to the next video. Instead of following a recommended timeline for progress, frequently all the videos were watched in succession. Material intended as a guided "course," a process taking from several weeks to several months, was absorbed in one bite.

The second issue with the videos, in general, is that players often were more concerned with emulating the *look* of my hand rather than developing their own awareness of sensation. I had intended the videos merely as a demonstration of the exercises. The practice, or true work, was not in copying the video, but in slowly researching how each finger felt, and learning to incorporate this new pattern of feeling and correct movement. The primary concept of creating a "very slow, careful imprinting of an entirely new pattern" through "evaluating everything ... carefully" was one that I did not sufficiently convey.

Furthermore, the exercises were often approached by way of the student's former practice habits, mirroring the rigorous execution of repetitive metronome work, practicing longer and harder than recommended, and altering the prescribed movements as a way to quantify improvement. In the process, the few basic tenets of the original exercise were forgotten. I was reminded of the animal from *Dr. Doolittle* called pushmi-pullyu (push-me—pull-you): in adding one new criterion, they would forget the former; correct one movement, re-aggravate another.

One further issue I encountered was a rejection or bypassing of the techniques that did not conform to their perception of accepted practice procedures. While almost everyone who contacted me indicated that they would be happy to return to playing even simple works, the truth was that they discarded techniques that they thought not sustainable in more demanding pieces. An alternate route often adopted was combining select elements of O'Brien's method with exercises from other methods. To

follow O'Brien's exercises while also adopting criteria or concepts from other approaches constitutes a distraction from O'Brien's intent, muddies the feedback, and renders the "very slow, careful imprinting of an entirely new pattern" unlikely to be achieved. Instead of becoming more sensitively attuned to all the movements and feeling of the hand, they found other goals to focus upon. They could not stop "driving," to use O'Brien's term.

Helping Musicians: Sharing Pat's Work/The O'Brien Method

Having acquired a particular combination of insights—the ability to see into problems in technique—would not necessarily give you the empathy you need to work with other musicians with problems. I went through so much pain in my own situation, such a terrible crisis, wondering whether I was going to be able to play again—what would I do with my life if I couldn't play? There was nothing else I wanted to do as much as I wanted to play the guitar. That gave me considerable empathy for other injured musicians.

O'Brien's emphasis on the significance of having experienced a musician's injury oneself in order to help someone else is not as trivial an idea as it may seem. As more methods and programs develop, practitioners have surfaced who have never experienced the disabling condition. This is not to say that there is no value in other approaches or that they cannot ultimately reinforce each other. The crux is to avoid aimless hypothesizing and to focus instead on scientifically based, anatomical fundamentals that can be disseminated worldwide without distortion. For those of us who have the experience, and therefore the empathy, for the injury, another problem arises in guiding others. Plainly, it is that we are not Pat O'Brien. He had a tremendous gift for pedagogy toward which I can only strive.

After working with people and seeing the difficulties in transferring my knowledge to others, I am more amazed (and grateful) that I understood what O'Brien prescribed and was able to apply it with only a handful of follow-up emails to keep me on course. While my objective has been to unravel the most efficacious way of disseminating O'Brien's method to others, unexpected obstacles indicate that it is more difficult than I had anticipated. The challenge, then, is to seek and identify the many reasons for both success and failure by careful study of all available evidence, and to persist in refining O'Brien's ingenious method, accordingly.

Patrick O'Brien left us no complete statement of his therapeutic method, only isolated comments in print. The attempt to codify the

O'Brien hand-therapy method and apply it to new patients of focal dystonia and other hand injuries is a work in progress, one where we find ourselves at the beginning stage. Among the lingering questions I have are:

- Are in-person sessions required for success?
- Would guided questions suffice—those that direct the student to take stock in how each movement feels, all the while reinforcing correct movement?
- Can a timeline for progress or a finite series of lessons be created that could be applied to most players?

Certainly, I learned that the information must be delivered and practiced piecemeal, in gradual steps, rather than all at once. Whether working with a therapeutic practitioner or on their own, success is dependent on the student's level of compliance with the O'Brien method, their willingness to conscientiously adopt all of its elements and technical aspects, the avoidance of distracting and potentially contradictory alternatives, and the ability to make the crucial personal change of "letting go."

I put forth these experiences, observations, and questions with an invitation to neurologists, therapists, and music instructors to join the discussion. Further investigation of Pat O'Brien's approach is required in order to refine the criteria necessary to achieve a higher success rate of rehabilitation.

Finally, the basic tenets of O'Brien's therapeutic method are pertinent not only to players of guitar, lute, and related instruments, but apply also to pianists, violinists, and brass and woodwind players with hand dystonia (as opposed to embouchure dystonia, which this method does not address). It is not uncommon for music departments to have on their faculty someone who specializes in the Alexander Technique or the Feldenkrais Method. I look forward to a time when conservatories and music departments will also employ a specialist in the O'Brien method, and that the method and techniques he developed will eventually become an integral part of every musician's training.

Do You Need a Physical Therapist?[1]

By Alice Artzt

Pianist Leon Fleisher returned to the concert stage after battling a disability in one hand that had left him unable to play for many years. The accompanying publicity made many people aware that, if not done properly, playing a musical instrument could lead to serious difficulties. It is ironic that it took a concert pianist's plight to draw the attention of guitarists to a problem that had been occurring for some time.

For years, those afflicted have kept their condition secret, particularly because of the great lack of knowledge and understanding of this condition. After all, a great virtuoso or major teacher who suddenly finds he or she cannot play for some mysterious reason, is hardly likely to announce it cheerfully to the world. The usual reaction is to change fingering to avoid the troublesome finger and to practice still more frantically, hoping the problem will go away. When the situation deteriorates to the point where disguising the problem is impossible, the victim usually drops out of the concert scene.

I can think of seven well-known artists in the guitar and lute world to whom this has happened (but they would not thank me for naming them). I have also met dozens of less well-known performers and students who have been so afflicted, and have watched two more major performers who seemed to have the same syndrome, and who, by now, have stopped playing concerts. In fact, these problems are so ubiquitous that they almost seem to be epidemic. It is a great pity because the cause of this condition is not simply nerves, a psychosomatic ailment, or a matter of losing one's mind. There are concrete physical causes and this problem is almost certain to occur, at least to some extent, in players who continually use their muscles in certain ways over an extended period of time. However, this condition can often be corrected, especially if caught early enough.

[1] A version of this article originally appeared in *Guitar Review* (Summer 1984). Reprinted with permission.

JLSA XLIX–L (2016–2017)
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The problem characteristically first manifests itself as a weakness or slowness of the *a* finger, or, less often, of the *m* finger. At this point the guitarist usually thinks, or is told by his or her teacher, that he/she is not practicing enough. The usual response is to dig into lots of hard, fast scales. But the more the player works, the slower the playing becomes and the more sluggish the afflicted finger. It gradually acquires a tendency to clamp into the palm of the hand and resists being lifted back into a position from which it could initiate another attack. When the *m* is used, the *a* will clamp in more and more and vice versa. About this time a slight fluttering or spasticity may be noticed in the *a* finger whenever one tries to use it, or whenever the *m* finger is used.

If one keeps practicing and playing in the same way, the finger eventually refuses to move and drags the neighboring finger down with it, so that the player is reduced to using only *i* and *p* almost exclusively. In some cases a slight reprieve has been gained by tying the offending finger in an unclamped position by various means—rubber bands, plastic splints, and the like, thus freeing the neighboring finger to work. No one can give concerts for long with such contraptions, and such devices do nothing to cure the underlying problems. It is a great tragedy for a musician to deteriorate until there is no further possibility of making music, all the while fighting for his or her artistic life, when a little knowledge might have prevented the disaster.

Why does this happen? Hands are well built to do the jobs they do, and the jobs they can do are varied indeed. A hand designed originally to enable one to swing from tree to tree, to poke a stick into a termite hole to dig out a tasty dinner, or to peel the skin off a fruit, today does an excellent job of typing commands into a computer, doing heart surgery, or playing the guitar. There are limits, however, to the abuse that muscles and tendons can withstand beyond which there will be trouble. Age is a factor as well. In younger people the repair mechanisms work faster, and often a muscle or tendon may be abused repeatedly and still manage to repair itself in time for the next day's misuse. With increasing age, repairs take longer and longer, and by about age 35 to 40 problems that were previously held at bay can become very serious.

The bones of the hand and fingers have tendons and muscles both on the back of the hand and on the palm side. These are attached to the tendons that run over the top and underside of the wrist and are then attached to the muscles of the forearm. The tendons called extensors on the back of the fingers and hands straighten the fingers or even bend them slightly back, while the flexors on the palm side curve the fingers in toward the palm of the hand. There are a few idiosyncratic elements

to the way we are "wired up" that are not ideal, and there are certain jobs that we simply cannot do, no matter how hard we try.

Try, for instance, making a cat's claw of your hand, with fingers and thumb curved, wrist flat, and the tendons over the knuckles standing out tensely. Keeping your hand in this shape, place the tips of your fingers on a table or flat surface. Now lift the *i* finger off the table. Now try the *m*. Fine: so far the fingers lift reasonably easily. Now try to lift the *a*. That finger doesn't work so well. Usually even the little finger, which we expect to be generally incompetent, manages better than the *a* finger. This difficulty with the *a* occurs because the nerves that tell *a* what to do are too closely interrelated to those that command the middle and the little finger. Once your brain is telling *m* and the little finger to press down, there is apparently no easy way to tell *a* not to do the same.

Let's try another experiment. Try holding your hand up, fingers straight or even stretched back as tightly as possible. Keeping your hand tense this way, bend your *a* finger at the second joint, one segment from the knuckle. Still keeping all the other fingers absolutely straight, try to bend the tip segment of the *a* finger down as well. Ah ha! You can't do it—in fact, you will find that with your other fingers absolutely straight, the tip segment of your *a* finger is disconnected from any voluntary motion. (You can try this with your *i* finger and it works fine—as you'd expect. The tip joint of the *m* finger lets you control it some, and even the little finger is better than the *a* finger at retaining a slight amount of control.) Another thing you can try is to make that cat's claw of your hand and then, keeping the fingers all in a tense claw position, pull on the tip of your *a* finger with your other hand, but resist and don't let the *a* finger straighten out. Now keeping in that position, try to stretch out both your *m* and little fingers at the same time. You can't do it! You can straighten out just the *m*, or just the little finger, but not both at once. If you insist on straightening out both those fingers, the *a* finger will collapse and straighten out also. Therein lies the root of the problem.

Pat O'Brien, who has studied this sort of thing extensively, explains it better than I could:

As has been observed above, when the tip joint of a plucking finger is flexed inward towards the palm, the adjacent fingers flex in tandem with the plucking finger. If one attempts to extend one of the adjacent fingers to make it ready to pluck the next note while the previously plucked finger's tip joint is still flexed, the adjacent finger undergoes a sort of 'crisis.' Should it follow the plucking finger as it naturally wants to do and flex sympathetically or

should it extend to prepare for the next note? In players who lack complete independence and control over the various different joints in their fingers it may be difficult to bend any part of one finger without bending all the joints. If this is the case, the player will often be attempting to extend a finger while at the same time trying to flex it sympathetically. In attempting to use both the flexing and extending mechanisms of this finger simultaneously, the player creates great stress in the opposing muscle and tendon systems. In this simple mechanically incompatible maneuver rests the cause of tendinitis and other progressively debilitating disorders in the majority of cases among musicians generally and it is by far the most common among guitarists. Therapeutically, one must relearn how to pluck with no tension in the tip joint. Indeed the best solution for many players is to avoid such tension at all times since it is possible to pluck with the larger knuckle of the finger and create no sympathetic tension at all in any adjacent finger. Some of the most advanced players can hold the tip joint steady in a slightly flexed rest position during the stroke without getting sympathetic motion, adding only minimal, and for them acceptable, tension to the adjacent finger. But this takes very great concentration, constant vigilance, a very relaxed approach to performing situations, and excellent kinesthetic memory and control over each joint. But generally the only solution for the player who is hurting requires total relaxation of the tip joints and very slow careful retraining of the plucking mechanism.

Pat O'Brien was a wonderful example of what retraining can do. He probably ended up with the most independently controlled set of fingers I ever encountered—a far cry from the problematic state he was in when we first met many years before. Retraining his hand so completely took a lot of hard work and analysis, but Pat felt that full recovery was usually possible, even after prolonged playing in pain, such as his own two-year ordeal.

I have found it quite impressive how much abuse the body can stand and still recover. Since working with Pat, I have had a similar experience with another professional guitarist, who deteriorated so much he could not play or demonstrate things to his students, but who got back something close to his previous technical level and speed with a lot of vigilant detailed work and analysis. And I have witnessed a number of other successes—but there is a lot of analysis and attention to detail involved, and not everyone is willing to devote that much work to the problem. Much better is to catch students or young professionals who are doing things wrong before they really get into trouble, and stop the problem before it occurs.

Certainly you don't need to wait until you are nearly paralyzed before working on using your fingers according to their anatomical requirements. Getting total independence of the fingers increases leverage, speed, and spontaneity, and improves timing, dynamics, and articulation, leading to greater musicality. It improves every aspect of your playing.

Students, or even advanced players, are often unable to judge whether they are relaxed or not. If you are not sure, an easy test consists of resting your arm on the arm of a chair and letting your hand go limp as completely as you can, permitting the hand to hang down naturally. Place a finger of the other hand under your wrist. Move your *i* finger gently back and forth from the knuckle—the joint nearest the palm of the hand. Feel what happens under your wrist: a tendon jumps down when you move the finger and goes back up to a relaxed starting position when the finger is not in motion. With no movement, the underside of your wrist should feel soft and relaxed. Now make a cat's claw. At the same time, move any finger, still feeling your wrist. This time there is little if any difference between the times when the finger is moving and when it is still. This is because your tendons are already as tense as they can be clenching your hand, so that one moving finger just causes one tendon to tighten a tiny bit more—probably not a noticeable difference. You can try playing the guitar with your right hand only, while still feeling your wrist, to see if you are relaxed.

But if you are not relaxed, just imagine that you are probably exerting something like three units or more of pull with your extensors and three units or more of pull with your flexors just to maintain that cat's claw position of your hand, and then you add another three units of pull from the flexor of the finger you are plucking with to move that finger—that makes a total of nine or more units of work needed to make that movement. If you do it with your hand relaxed, you need only the three units of pull for any given finger, using only your flexors to do the job. This way you don't fight yourself while playing. Many guitarists do fight themselves most or all of the time. Then they wonder why their hands get tired or why their fingers finally rebel and refuse to work anymore.

If you find you have any of the problems mentioned, the first thing to do is to stop playing before you do more damage. The next thing to do is to go to someone who can help you—possibly a teacher who has experience with this type of problem and can tell you how to retrain your hand. If you are interested, I have a video posted on YouTube that describes this problem and gives some ideas on how to think and work

to get back a usable technique (https://youtu.be/KaS-W0WAp8Q). I have posted a few other videos discussing the Ida Presti right-hand technique, which might also be helpful. In any cases that have involved my helping people with this problem to recover, I have found that getting them to use the Presti technique, while carefully watching very vigilantly what they were doing, was a pretty reliable path to getting their fingers to work properly.

I am not really convinced it is the best or most effective idea to try, since the reported results seem to be a bit mixed, but some people have tried a medical path by going to one of the doctors who specialize in this problem: Dr. Fredrick Hockberg, Dr. Robert Leffert, and Dr. Bhagwan Shahani are among them. These doctors are connected with Massachusetts General Hospital in Boston, where pianist Gary Graffman and many other musicians, including several guitarists, have been treated.

If you are merely curious and wish to learn more about hands, you might start by studying *The Anatomy Coloring Book* by Kapit and Elson (Harper & Row, ISBN 0-06-453014-8). The diagrams of hands will give you a better idea of what happens when you play, and may help you to improve the functioning of your fingers even if you aren't doing anything wrong. And if you do have problems, I hope that some of the ideas in this article may start you on the way to saving your artistic life.

Therapy for Carpal Tunnel Syndrome

By Jason Priset

My story began as it has for many other musicians. I was just finishing my master's degree in the spring of 2006 at Stony Brook University and had already been accepted into its doctoral program starting in the fall. At the time I was playing a lot—jazz with the big band and in a jazz ensemble comping chords. I was learning the theorbo and some very basic basso continuo playing in Baroque Ensemble, and preparing for my master's final recital. The repertoire for my recital was quite ambitious, as it should have been for a student going into a doctoral program. The recital included *Tres Apuntes* by Leo Brouwer, BWV 996 (Suite in E minor) by J. S. Bach, Sonatine III, Opus 71 by Mauro Giuliani, and *Koyunbaba* by Carlo Domeniconi.

Injury

After finishing the spring semester and upon completion of my final recital on April 26, I began experiencing some crippling issues with my left hand. I began to notice the pain while playing theorbo during a series of Baroque Ensemble concerts that followed my recital.

Suddenly, I was at a crossroads. I felt I had a multitude of opportunities in front of me, but I couldn't pick up an instrument without experiencing severe pain in my left hand. This was most certainly some form of carpal tunnel, and I sought the advice of a number of doctors. When I met with them, I was struck by the immediate disinterest they showed on learning that I was a musician and not even remotely interested in surgery. Rest and anti-inflammatory medication were their only recommendations. Most likely they were just as much in the dark as I was as to what the actual problem was.

Pat O'Brien

"Go see Pat" was the advice of a couple of close friends of mine. Pat? Who was Pat and what could he do for me? So I reached out to Pat and described my problem. He immediately scheduled me to come

JLSA XLIX–L (2016–2017)
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in for a lesson. Before seeing him for my first lesson, he gave me, in an email, some of the best advice I have had to date about dealing with inflammation and overuse of the hands. On May 17, 2006, he wrote:

Icepacks are of little use. Fill a large bowl with water and a tray of ice cubes and immerse the area on and off as you can tolerate over the course of about fifteen minutes. Be sure you have time to leave it idle afterward as you should not use it for anything until it returns to normal temperature. You don't want to strain a cold muscle by picking something heavy up with it unwarily.

The ice water touches you everywhere and disperses the heat of the inflammation throughout its whole mass. Thus it achieves a better penetration on deeper tissues. Don't do it for too long as you don't want to freeze your fingertips. You could do it a couple of times a day, especially after any exercise.

Pat's Therapy Program: Finger Placement and Adduction

Pat was one of the rare teachers who, upon entering the room, knew exactly what you needed to learn and exactly which method or exercise would best serve that need. It was not long after completing my master's that I went to see Pat, early in June 2006. I played a part of a single movement from the Bach suite. After about six or seven measures, Pat stopped me and started to explain the finer points of using adduction and abduction in the left hand, and to write out his adduction exercise. Pat realized almost immediately that the problem I had been having all along was a matter of simple mechanics. I, like many other guitar players, had been using only one side of my left-hand fingers, using the abduction muscles rather than using a balance between the adduction and abduction muscles.

The adduction exercise (as seen in the Adduction #1 supplemental sheet) with which Pat began was a placement exercise only, with no playing of actual notes, in VIII position. The position would vary depending on which instrument one was playing. While turning the fingers toward each other (adducting), I would start from the 6th string on the 8th and 9th frets and hold for four beats. I would then release and go to the 5th string and hold them exactly the same way. Part of the importance of this placement exercise was twofold: I was not forcing my hand to press any harder than necessary (which can also happen when using the right hand), and I was learning how to release the tension on the strings and in my body when it was no longer needed.

Eventually, string by string, I would work my way down to the 1st string and, upon arriving there, I would work backward and eventually return to the 6th string. This entire process would be repeated but this

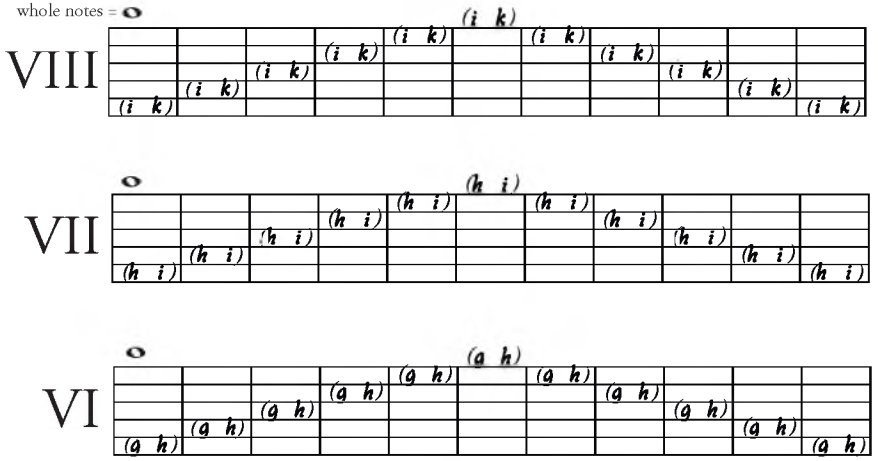
Adduction #1

ADDUCT

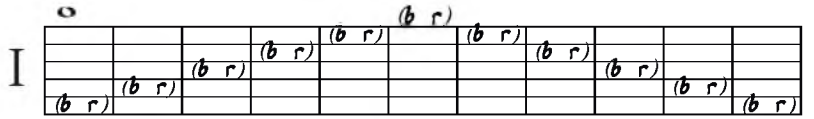
Placement Only

fingerings: $\begin{matrix}2&4\\1&3\end{matrix}$ (1/2 step)

whole notes = 𝅝

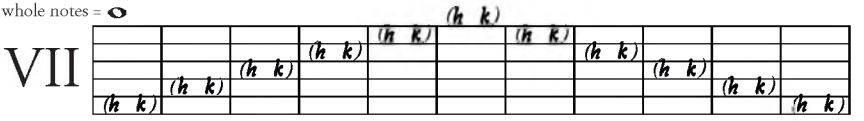


same pattern in each position until:

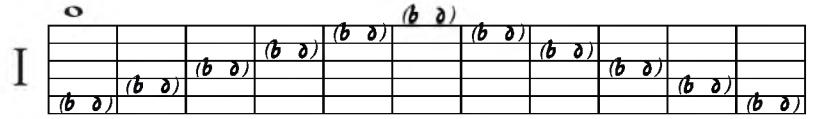


fingerings: 1 4 (whole step)

whole notes = 𝅝



same pattern in each position until:



Adduction #1 supplemental sheet. Notated by Jason Priset, typeset by John Lacombe

time starting in the VII position on the 6th string. The exercise was done using the 2nd and 4th fingers in all positions first, and then the entire process was repeated with the 1st and 3rd fingers.

The reason for starting in the higher position was simply that the frets are closer together and therefore easier for the left-hand fingers to reach using adduction. I would then work down toward the 1st fret because the frets gradually widen, making the adduction a little more difficult in the lower positions.

I spent the first two or three lessons doing this specific exercise. Pat would have me perform the exercise from VIII all the way down to I position to make sure I was consistent with my placement in every position.

It was in the first two or three lessons that I realized another aspect of Pat's pedagogy that made him a much different teacher than anyone I had ever worked with. Much of the time during the first few lessons was spent talking about the historical significance of some of the repertoire I had been playing, as well as the physiology of the hands and why I might be experiencing these problems. Lessons at this time were 10–15 percent actual playing. The adduction exercises were not even written out as clearly as they were described and shown on the instrument itself.

With prior teachers I would arrive at a lesson, sit down, and play through a piece. There might be some discussion about the history of the piece and how to make it "sound" more authentic, but mostly the lessons were concerned with using specific fingerings to make certain passages easier to play. There were some exceptions: I had the opportunity to play in a master class with Andrew York (I performed three minuets by Fernando Sor) and York spent almost the entire time on interpreting the various ornaments I performed and how to be even more stylistically interesting with my interpretation. Very little time was spent on technique.

It was during my second lesson that I brought the theorbo to Pat, and he measured the height of the strings off the fretboard. He realized that the action was much too high and strongly advised I get it fixed. Within the context of this conversation, Pat also showed me exactly how to measure the action on any fretted instrument, what would be considered "normal," and what the process of readjustment might involve.

Dynamic Adduction Exercises

Upon completion of the placement exercise at the end of June 2006, the next step was to actually play the notes that were placed, doing so in a descending pattern (as outlined in the Adduction #2 supplemental sheet). In July I began again at the VIII position and placed the 4th finger

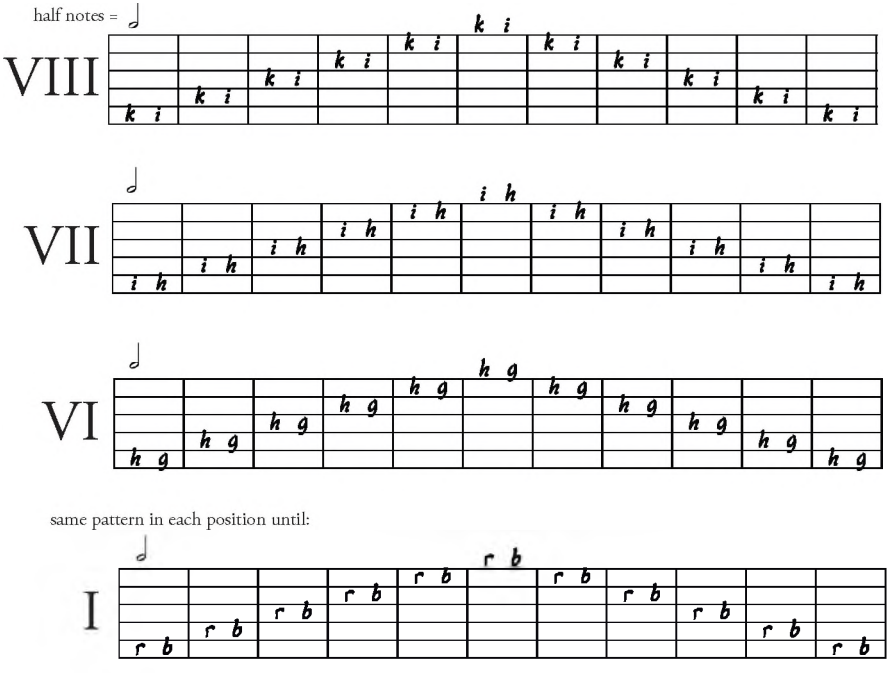
Adduction #2

ADDUCT

Playing

fingerings: 2 4 / 1 3 (1/2 step)

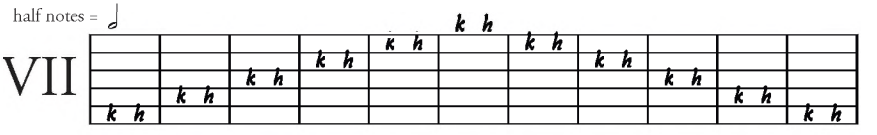
half notes = 𝅗𝅥



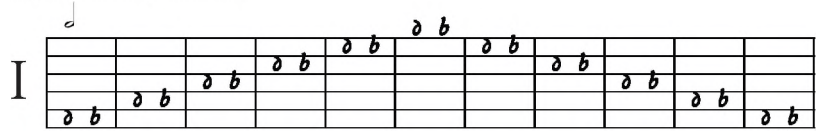
same pattern in each position until:

fingerings: 1 4 (whole step)

half notes = 𝅗𝅥



same pattern in each position until:



Adduction #2 supplemental sheet. Notated by Jason Priset, typeset by John Lacombe

on the 9th fret and 2nd finger on the 8th fret. Now, I would actually play, starting with the 4th finger, then the 2nd finger. One important aspect of this was to play in a legato manner: after playing the 2nd finger I would have the 4th finger placed on the next string and "transfer" (in Pat's words) the weight from one note to the next note. This process would be repeated in all positions with the 2nd and 4th fingers first, then the 1st and 3rd.

This was the first time anyone had ever explained to me, in such detail, the importance of transferring the weight from one finger to the next when using the left hand. Many exercises I had done in the past had been done while holding down fingers on the instrument that were no longer needed or being used. This can easily confuse the muscles in the left hand as well as the signal that the brain sends to the fingers. I learned that if I transferred the weight in the fingers—meaning that I would lift and place subsequent fingers at the exact same moment—I could also release the built-up tension in the body and shoulders.

After about two or three lessons of Adduction #2, I moved on to a more advanced form of the adduction (Adduction #3 supplemental sheet). This was late July and I was using all four fingers of the left hand in every possible combination (four!). Just as I had done in the prior two exercises, I would begin at the VIII position and play the pattern from the 6th to the 1st string, then work back to the 6th string. Every position would be played from VIII to I with that pattern (just like the other adduction exercises). After completion of the first finger pattern I would move to the next combination of fingerings. This process would repeat with each finger pattern.

During the very early stages of my therapy I was not playing any repertoire at all, just the adduction exercises. I began to notice a difference almost immediately following the repair of the theorbo and only two months of intense practicing of adduction from June to August.

I kept my discipline and always started with the placement before gradually moving to playing. There wasn't much more I could do at the time, and I was determined to give it my best effort and see if I could truly work past this problem. I did not seriously pursue any major repertoire on any instrument until a good eight months later, sometime in January 2007.

Basso Continuo and the Continuo Collective

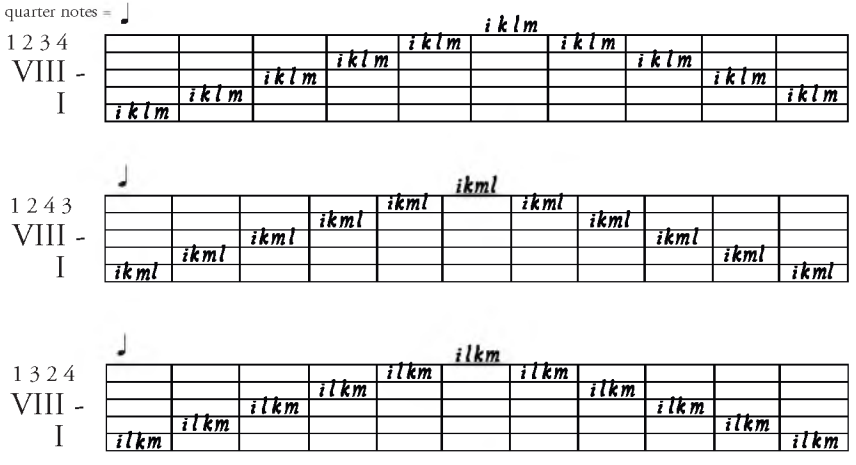
As I was resting and strengthening my hand, through Pat's advice, I started slowly working on basic theorbo basso continuo playing. Pat had a very methodical approach to teaching basso continuo by starting

Adduction #3

Advanced

fingerings: 4!
(all variations of 4 fingers)

quarter notes = ♩



same concept using all combinations of 1234 (4!)

1 2 3 4	2 1 3 4	3 1 2 4	4 1 2 3
1 2 4 3	2 1 4 3	3 1 4 2	4 1 3 2
1 3 2 4	2 3 1 4	3 2 1 4	4 2 1 3
1 3 4 2	2 3 4 1	3 2 4 1	4 2 3 1
1 4 2 3	2 4 1 3	3 4 1 2	4 3 1 2
1 4 3 2	2 4 3 1	3 4 2 1	4 3 2 1

Adduction #3 supplemental sheet. Notated by Jason Priset, typeset by John Lacombe.

with the basic chord sequence I, IV, V, I of a bergamasca (also known as *Les Bouffons*). He would begin by writing out the bass only and then a tablature realization of the chords on theorbo. We started in the key of G Major as it was the most suitable for beginning on theorbo. To this basic pattern one could then add a suspension on the V chord. In subsequent exercises, passing basses could be added, including the use of the VI (or first inversion) chord. After doing these in the major key, we would then switch to G minor and play the same sequences. This approach, using the same figures, was then done in most of the other keys without straying too far into the sharp or flat keys. The chord sequence and direction of the bass line used for each key remained the same. In this way I could understand the subtlety of the pattern in each key, which could be quite different from one to the next.

In September 2006 I started playing with the New York Continuo Collective, a collection of amateur and professional lutenists and singers who meet regularly in New York City throughout the year. The rehearsals culminate after a year with a performance. It was with Pat's encouragement that I began to attend and become a part of the Collective. My involvement lasted several years. The Collective was run very much in Pat's style, and the attention to detail was exactly what had attracted me to Pat's teaching style in the first place. As I wasn't playing much advanced solo repertoire at this time, it was a perfect opportunity to get some hands-on experience playing basso continuo.

Although I have since had bouts of carpal tunnel, none have affected my playing. I simultaneously fixed my left hand while refining my technique with Pat. In the spring of 2008 I gave the first of many solo recitals before earning my doctorate from Stony Brook. This was a recital of 19th-century guitar music, including works by Sor, J. K. Mertz, Francisco Tárrega, and Mauro Giuliani. I played using a copy of a Stauffer guitar (an instrument lent to me by Pat). I began working on this repertoire in January of the previous year. This was the first time I was able to pursue advanced repertoire and feel comfortable enough learning the music.

As I mentioned, most of the focus in my therapy was on the left hand. This was the area, I believe, where Pat thought I needed the most guidance and help. However, Pat helped me with my right hand also. When I began basso continuo, I did learn, through simple continuo exercises, to use rest strokes with my thumb. When playing theorbo and lute this is essential as the bass is the most important part and much of the solo repertoire requires this technique. It also helps with an instrument like the theorbo to keep the right-hand fingers planted on the instrument, specifically because of all of the bass strings on a theorbo.

Pat's influence also extended to my choice of instrument. While I was studying with Pat I became more interested in playing early music on the original intended instrument. Much of Pat's pedagogy involved playing the repertoire on the instrument for which it was written, rather than in an arrangement for the modern classical guitar. Much of my training up to this point in my life had been to play early music in arrangement, even though often it wasn't clear whether or not the score indicated that it was an arrangement.

Understanding historical context is essential if one is to successfully perform music from a given period, even if it is an arrangement. In the realm of the guitar, at least a dozen different types of instruments were used between the renaissance and the 20th century. The instrument closest to the modern classical guitar is the 19th-century guitar, but even that has some definite differences. Although 19th-century repertoire can be performed note for note on a modern guitar, certain passages can become clunky and awkward.

It was during my studies with Pat that I learned to see the value and potential in learning more about pre–20th-century guitar and lute repertoire. I also increasingly pursued the possibilities of playing in chamber ensembles. These opportunities were few and far between with my experience limited to the modern classical guitar. Most modern guitar repertoire is written as solos or for very small chamber ensembles. The projection of the modern classical guitar does not compete well with other string instruments. It was with Pat's steady guidance that I learned basso continuo and explored much 17th- and 18th-century chamber music and opera. I brought a plethora of repertoire to Pat for his input. Whether it was baroque guitar, theorbo, 18th- and 19th-century guitar, or modern classical guitar, there were always hidden treasures Pat was able to extract from the music.

His understanding of harmony, history, the physiology of the body, and his ability to tie all three together was unique. I distinctly remember a lesson in which I played a toccata by the 17th-century lutenist Allessandro Piccinini. Pat compared the style of this work to Gianlorenzo Bernini's famous statue of *David* as representative of what the music was describing. This was in contrast to Michelangelo's *David*, which was much more stoic and relaxed than Bernini's version. The tenseness of *David*'s strained muscles as he posed ready to strike was equivalent to the musical drama created by Piccinini. The composer used dissonance to create this effect, to be countered by the great relief that breaks that tension in the cadences, especially in the final one. Pat helped me make sense of the work and the overall style of the toccata itself. I had never played this piece as well before.

After helping me fix my hands, Pat applied the same methodical approach to other aspects of my playing and understanding of music. His approach was much different than anything I had ever experienced before. I was still studying with another wonderful guitarist and teacher at Stony Brook, but Pat offered something unique, and I could see the enormous benefit of his style. Pat showed me a more natural approach to plucking the right-hand notes by relaxing the fingertip joints when pulling the finger through the strings. This also facilitated a much better sound. I had never had any intention of pursuing theorbo or lute seriously but Pat, in his own way, simply tended to and nurtured my education until I realized how much more I enjoyed playing and understanding early music, and my love for the music simply blossomed.

On top of it all, he was also incredibly generous and kind. I can remember one of the early LSA festivals in Cleveland I attended in 2010 and sitting in the LSA office (I was assistant director at the time) trying to figure out continuo for a song I wanted to perform with a soprano. The piece was "Se l'aura spira" by Girolamo Frescobaldi. Pat, walking by the office, came in and spent the next hour explaining the motion of the harmony and its relation to the text. These were all things Pat had showed me before, whether in lessons or through the Continuo Collective. This was a reinforcement of the idea that each piece should be analyzed according to what the text is about, and what the basso continuo is saying harmonically. This helped me transform the notes on the page into something with musical substance.

At the next festival in Cleveland in 2012, I was trying to figure out a way to lower the action on the nut of my baroque guitar. Pat escorted me into the "Lute Doctors" office and started explaining to me which were the proper tools I needed for such a job, and we spent the next 90 minutes sanding down and fixing the string alignment on the nut. We first tried fixing the existing nut and eventually turned it upside down to make an entirely different nut. We also lowered the bridge saddle as much as physically possible. One solution that Pat had mentioned in the past, and again during this lesson, which was the easiest possible solution is to put larger (in other words, thicker) frets on the instrument, whether it be a lute or guitar. This can only be done, of course, on an instrument that requires tied on frets, but is incredibly useful and something I have put into practice since.

As in my lessons, when I was dealing with my hand injury, the idea was to make the instruments I was playing as easy as possible to play. Sometimes an injury is related to faulty technique, but there are

times when it is due to a faulty instrument. A player might need to alter his or her technique in a negative way when playing a bad instrument, and this can be detrimental. In the end, the baroque guitar we repaired was much easier to play, and I had a much better understanding of what to do next time.

To sum up, much of Pat's teaching method had a lot to do with relaxing the fingers and the body. This might seem obvious to most, if not all, musicians, but to put it into practice is another story altogether. Pat often talked about his dislike for musical education, specifically as it takes place in colleges and universities. His method is very systematic and is based on developing a strong fundamental technique first, and then approaching repertoire given a student's current stage of development. It was Pat's theory that much of the repertoire students are playing in conservatories and college programs is far beyond what their technique is capable of handling at that moment. There is certainly something very valuable to taking the time, at a young age, to learn proper technique. Sometimes the demand to produce advanced repertoire in colleges does not allow for this to develop in a natural way. At a young age the muscles can recover very quickly from physical trauma, and this gets many aspiring musicians through some very difficult repertoire. Unfortunately, there is no telling when the body will no longer be able to cope with such stress.

Fortunately for me, I came to Pat at the right time. One concept that was most important to Pat, and influenced his approach to handling injury, was to find a way around the injury rather than address it directly. In my case the carpal tunnel was not necessarily a result of my playing, but it had a major effect on me when I was playing. The technique I was using in my left hand was not allowing me to play past the injury. Pat's method of using the adduction exercises strengthened the way I used my left hand and molded my hand into a more ideal playing position. Since that first visit to Pat's office in 2006, I have had no limitations on learning any specific repertoire. I completed the DMA from Stony Brook University in May 2011, and have since then been regularly performing as a soloist and chamber musician in New York City, the United States, and abroad. I have also developed an affection for the Lute Society of America, largely because of Pat's connection to it, and have been serving as the director of the festival for the past five years.

Carpal Tunnel Syndrome Retraining with Patrick O'Brien

By Greg Chako

I began taking private guitar lessons in 1968 when I was 10 years old. I was first introduced to the classical guitar (in private lessons with Edgar Dana) in 1975 at a summer-long music studies program called *The Guitar Workshop* in Long Island, NY. By the early to mid-1980s, I was playing jazz guitar professionally, mostly in trio formats with bass and drums, but also occasionally as a soloist.

After moving to Brooklyn in 1986, I stopped playing guitar altogether and began selling industrial real estate. However, during my five years or so as a salesman (and not a guitarist), I began practicing guitar again, focusing on unusually physically demanding solo guitar arrangements. My love for the guitar was rekindled. I was practicing up to five hours a day.

Advent of Carpal Tunnel Syndrome

It was after I started practicing the guitar again that I began experiencing the debilitating symptoms of carpal tunnel syndrome. A doctor advised I stop playing, and when I did so, my symptoms ceased. But, when I resumed my playing a few months later, the symptoms returned with a vengeance, and the doctor suggested surgery.

Though I was told that surgery was at least 98 percent effective, I did some research before acquiescing to the surgery; I called pianist and educator Dorothy Taubman, because I had heard of her knowledge about common ailments affecting musicians. On the phone she expressed her strong belief that I should avoid any kind of surgery on my hands or wrists, and told me to instead call Pat O'Brien, who she thought could best advise me.

Working with Patrick O'Brien

I called Pat. He concurred with Dorothy about resisting surgery and agreed to meet and help me. We met just a few times, but he made

JLSA XLIX–L (2016–2017)
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a lasting and significant impact on me. His overriding theme concerned achieving a balance of mind and body, and most specifically in the muscles of one's hand. He taught that as guitarists, we tend to stretch our fingers in ways which overdevelop one set of muscles at the expense of another, causing an imbalance that can lead to stress and disease. He made the following important points:

- Guitarists have historically been trained improperly; that is, without adequate information regarding repetitive motion injuries. Therefore, harmful habits are easily propagated.
- Guitarists, like athletes, need warmup exercises due to the physical nature of playing the guitar.
- There are two types of muscles in the hand (apart from the thumb muscles that are solely for the thumb): the abductors that control the four fingers spreading apart; and the adductors that control the four fingers squeezing together.
- There can often be an imbalance in a guitarist's hand because the abductive muscles used for finger stretching may be overdeveloped at the expense (weakness) of the adductive muscles. This imbalance can lead to stress. Pat believed redeveloping balance in the hand by building up the weaker adductive muscles can relieve the symptoms of carpal tunnel syndrome.

Pat gave me a series of playing exercises to strengthen my hand's adductive muscles. I was to pay attention to my left, "fingering" hand while playing to see whether my knuckles were apart or together, telling me to bring them together as much as possible and avoid having them splay apart.

While fingering four chromatic notes per string (for instance, A on the 6th string, 5th fret, with the 1st finger; to Bb on the 6th fret with the 2nd finger; to B on the 7th fret with the 3rd finger, etc.), he asked me to play the notes slowly and as musically as I could, while bringing my fingers and knuckles as close together as possible.

Exercise Aids

Pat suggested two isometric exercises, one to strengthen the muscles separating the fingers and one to strengthen the muscles that hold the fingers together. I bought a rubber band-like plastic tube with which to wrap (or tie) two fingers together, and then tried forcing the fingers apart against the resistance provided by the tube. This was meant to strengthen the muscles used for stretching.

I bought some thin, colored rubber, with each color providing a different tension/strength level, and then tightly held a piece between my fingers. To strengthen the "coming-together" muscles, I would hold the rubber between two fingers as tightly as possible, while the other hand forcibly pulled the piece out. The goal was to prevent the rubber from being pulled out, thereby exercising the adductive muscles.

He also suggested general warmup exercises before playing, such as yoga or basic stretching. A couple years after meeting Pat, I relocated from New York to Hong Kong, where I met a classical guitarist who also had suffered from carpal tunnel syndrome. He recommended the Chinese balls, some that are made from steel, small, and with a ringing bell sound when moved; and some that are large and made from solid polished stone. With practice, these two balls should be rotated quickly in one's palm without touching each other.

I also began learning and practicing tai chi, roughly five mornings per week, for about 45 to 60 minutes per session. I mention this because both the Chinese balls and tai chi are precisely what Pat emphasized (in general terms) as a remedy for carpal tunnel: *to exercise and prepare for playing, similar to how athletes do prior to a competition, to balance the mind and body.*

Long-term Recovery Results

Because it wasn't until after I moved to Hong Kong that I began playing guitar professionally again, it is hard to say to what extent Pat's advice helped me with the injury, but my sincere belief and recollection is that his lessons provided almost immediate relief (within weeks) for my symptoms, and that his general advice with regard to warming up and being well aware of the physicality of playing guitar is healthy and valid information for both the treatment and prevention of carpal tunnel. I have not had any serious recurrence of carpal tunnel syndrome, despite playing literally daily for years at a time, in both solo classical and group-jazz formats.

During these "lessons" I had with Pat, I asked him questions about playing classical guitar. I believe that, though the time I spent with him was relatively short (and sweet), he impacted me considerably because of his character and engaging passion for music. For example, I singularly attribute to him my desire to seriously investigate the classical guitar genre, and specifically Spanish romantic music. He told me stories about Francisco Tárrega and Miguel Llobet. He talked about, and demonstrated on his guitar, how important the playing of a single

note was, that is, how many ways one could play it (with variations of volume, vibrato, timbre, etc.) in order to garner the most expressive emotion. He told me about repeatedly bumping into the famous jazz guitarist Jim Hall on the New York subway. These impromptu conversations were, in retrospect, a revealing glimpse into Pat's fascinating psyche and open ears and heart, as much as they were an inspiration to me.

After meeting him I bought the Zen-On publication of Tarrega's transcriptions, and Llobet's *16 Folksong Settings*, and began learning as many of the pieces as I could. I acquired a guitar made by one of José Ramírez's students, and accumulated a small library of guitar music. By the time I relocated to the Far East, a few years after meeting Pat, I could perform two 45-minute sets of solo classical guitar music satisfactorily. I began working frequently as a soloist on classical guitar at the exclusive Hong Kong Country Club, for a five-night-a-week, 4 to 6 pm slot in the VIP lounge of the Ritz-Carlton Millenia, Singapore, a gig that lasted for years and helped me get my foot in the door to booking other venues for that hotel. Upon reflection, those few meetings with Pat not only helped cure my carpal tunnel, but they helped to broaden my musical mind and ultimately my pocketbook as well! Thank you, Pat!

TAPE TRANSCRIPTION, CHAKO SECTION (c. 1991)

Editor's Introduction

This digitized videotape session begins with a half-hour monologue of Patrick speaking to his camcorder on the subject of the left hand, and continues with a 20-minute conversation between Pat and jazz guitarist Greg Chako. There are references to other people in the room observing, perhaps Tom Singman, a folk guitar player who came to Pat unable to play, and who has kindly put this digitized video recording and others at our disposal.

Transcription

PATRICK O'BRIEN: This is Greg Chako, formerly of the Berklee School in Boston, a heavy jazz player with a big complicated chord vocabulary with a lot of 2nds on the inside of chords. After a long hiatus in business, he started practicing real hard again this winter and was diagnosed with carpal tunnel syndrome in his left hand. Tell us the story.

GREG CHAKO: That's pretty much true. I played for just shy of 20 years, the last seven or eight or so were professional. I had a reputation for being able to play all night, much to the chagrin of some of my band members. I stopped playing about four to five years ago completely, didn't touch the guitar. Then last winter I embarked on an ambitious and somewhat excessive practice schedule. I played repetitively, slowed the metronome to 60 and gradually built back up. I was playing about four to five hours per day, and developed soreness in my hand. When I tried certain chords I would get a stabbing pain in my wrist. I thought it was normal, I thought it would pass.

Then a numbness developed in my thumb and fingers, there was a lot of pressure on my thumb. I wasn't worried for a couple days, but then I would wake up in the morning and could not feel my hand. My primary care physician and a neurologist diagnosed carpal tunnel syndrome. Fortunately I was able to get doctor appointments within weeks of noticing the symptoms. The neurologist suggested surgery would not be recommended, though he couldn't discount it in the future. He suggested stopping playing for a few months, prescribed anti-inflammatory medicine and vitamin B, and gave me a brace to wear at night so my wrist could not bend at an awkward angle.

A friend of my wife's suggested I call pianist Dorothy Taubman in New York, who was writing a book on musician hand injuries, so I phoned her. In the phone call she told me I was doing everything wrong, but I wondered what she knew about playing the guitar. She suggested calling Pat, who had had some success treating hand injury.

O'BRIEN: Ironically, we've only met once. Dr. Frank Wilson introduced us.

CHAKO: I took the neurologist's advice and quit playing for about three months. When I began playing again I took it a little easier. I did the exercises that Pat recommended and noticed immediate results. Within a period of less than two weeks I could actually see the adductor muscles start to develop. As simple as the exercises may seem, the fact is that I couldn't do them before. You get to see immediate results in trying these exercises.

I haven't exactly quit my job yet, but I am playing again on a fairly regular basis, almost daily. Certainly on the weekends I can put in about four to five hours without any major problems. I do encounter some soreness in the hands, but certainly minor compared to what I'd experienced before. Generally I find that a brief break from the instrument

will do the trick. I'll go make a cup of tea and then come back and play another few hours.

O'BRIEN: Basically what we did was that series of adductive exercises that I described on this tape already. We started doing small squeezing adductive exercises with nonadjacent fingers, worked down the neck gradually, then increased the size of them, coming back up the neck and doing larger intervals. We saw some things about the posture with the instrument, dropping the arm a little looser, and especially not curving the thumb.

CHAKO: I'm sure a lot of jazz players will play with their thumb. I don't do it as much as some I've seen, but I do find the need occasionally to bar with the thumb.

O'BRIEN: That's a fine thing to do as long as that's the only time you tighten your thumb, as long as it's not tight on the back of the neck.

CHAKO: You know, since I started practicing these exercises, I notice—whether I've done them or not that day—that that curved thumb will occur occasionally, two or three times in a passage. So I do try to correct the problem. There are certain kinds of chord passages that result in improper movements. So I try to adjust by making sure that my thumb is straight, not hooked at the tip. I recall in our last lesson together that the thumb can go any number of places, provided it remains straight.

O'BRIEN: There's another aspect of it, namely, that almost invariably when you tighten the thumb, you also oppose the thumb, rotating it around into the palm.

Try playing a couple of chords. We tried a couple large chords where you reconsidered the way of leverage of fingering them. That one's a good example.

CHAKO: That was an F chord, the voicing from the lower notes up was F a d e and c on strings 5,4, 3, 2, and 1. Now you suggested that another way to approach this would be to barre all the way across with my first finger and move the thumb more in the middle of my hand so it's in the center of gravity rather than off to the side. Because what's happening here is that my little finger is bending outward, my index finger is bending out, and if I'm not careful my thumb will roll right as well.

O'BRIEN: At one point when you originally did that for me, there was a split between the 2nd and 3rd. You were trying to clear the 2nd string and barre these two, was it F a d e, and you had kind of turned that finger around to try to get it clear of the other string. As you did it now, these two fingers are adducted and even 4 is not nearly as far out as it once was. It's basically still the same chord, it just has less tension inside.

CHAKO: It's a matter of awareness. Once you're aware of the adductive muscles and bringing the knuckles closer together, you can really make a difference. Now I find I can stop myself while I'm playing it and see if I can correct the problem.

O'BRIEN: You have to keep from going over the red line. You can do the wrong thing some of the time, but not all of the time.

CHAKO: The hardest thing in jazz passages is if you are doing a combination of chords and single notes that require a finger to stretch out only for a moment. Basically, if you find yourself in a bad position, the correction, the adductive motion in and of itself, is enough to compensate for some of the strain. Is that all it takes?

O'BRIEN: All you have to do is eliminate a certain amount of strain. With the thumb it's a question of not doing a stressful thing and leaving the stress there, doing it when you don't need the strain. Sometimes you have to do one horrendous thing for a chord, so you do it and then let go. You may be able to do one horrendous thing as long as you're not doing two or three others at the same time. One finger may have to be hooked at a very weird angle, but if you're drawing your first finger back and also splitting these two others at the same time, it's a deadly combination. It's not a situation where you have to do everything perfectly, you just have to do a smaller number of things with a little less stress.

CHAKO: I was hoping to get enough information out of one or two lessons to be able to work on my own.

O'BRIEN: Basically you did.

CHAKO: I'm at the point now where I certainly haven't yet mastered the latter part of the exercises.

O'BRIEN: You've been doing half steps with adduction?

CHAKO: I've been doing whole tones with adduction and also actually playing a whole tone. Which is actually quite complicated because when one finger goes up, the little finger will go out into a bad position. It's hard to lift one finger up, put it down again, and retain the proper position with the little finger.

O'BRIEN: There's a moment where you learn to squeeze these two fingers and adduct them. But if you let go of the 2nd, your 4th finger feels like it's going to fall. It's hard to learn to hold that in while you let go of the other, traveling across the strings holding them straight up. They are very much habitually used to going out, collectively in a pair. But as you start to go across the strings, they will wander a little.

CHAKO: Once you start moving, it becomes a little bit more difficult. I think the way around that is to start with the simplest thing. Obviously the 2nd and 4th are more difficult than the 1st and 3rd. You get that simpler thing mastered first.

O'BRIEN: Some people have to go in a different order. For instance, I will have them squeeze, and then have them actually play just one finger, raising and lowering it, very slowly, or have them do slurs with a small, half-step interval, before they can get the whole tones. You can find different ways of learning it.

For some people, when they first try to cross the strings, I ask them to slur instead of trying to cross the strings, and gradually to move it across the string without picking it up in the air. Just to try to roll across to the next string and get the feeling that there is some continuity. So I'm actually never leaving the strings, I'm always in touch with the strings and the fingerboard and rolling across. The sensory information I get as to what part of the fingertip seems to be touching the fingerboard or string is useful.

Another way of thinking about trying to correct the fingers is something I call the "macho appeal." When you're trying to ask people to do this, you try to give it a life-giving image of positive, good balance and so on. If they can't get it from that, you can sometimes look at the calluses on their fingers and say, well, you've got a hard callus here but it's soft there. I want you to build up those soft places, toughen and harden the inside edges of those fingers. Immediately this would appeal to an American.

Another point that I make to players of classic guitar is that if you land on the center of your fingertip this way, you can then pluck a slur

with a broad surface on the front of your finger. And you get a different sound than you would if you hook on the edge of the finger with the slur. Especially in the treble, this kind of slur sounds very angry [he demonstrates a harsh, metallic slur in the high register], and this one sounds mellower and fuller [he demonstrates a softer, sweeter sound on the same tone].

There are other benefits to it, and if you can appeal to someone's wanting something as crass as to build up the callus on the soft side of the finger or as aesthetic as trying to pluck a better tone on the slurs, you can use some trick of memory that will enable them to do that.

CHAKO: I came here the first time with some reservations, and want to emphasize from someone who had perhaps not suffered as much as you—and thank God I wasn't performing professionally at the time and losing my source of income for three months—I want to thank you personally and with complete honesty, that as simple and insignificant as these exercises seem, their effectiveness in my opinion is unequivocal.

O'BRIEN: The point about that is that there are a couple guys on the tape who have right-hand problems, and those are cosmically difficult, because they are a different order of problem. The left-hand problems actually are comparatively simpler to work on. Ironically, I think some of the left-hand people have spent more agony and more time and more money trying to correct the problem.

CHAKO: Are they jazz players?

O'BRIEN: They are fingerpickers, banjo pickers. But a jazz guy who has a left-hand problem, he's playing with a pick and has had this surgery. He has sold all of his archtop guitars, changed to the lightest action, made every other sensible move you could make. This is just the one thing he never tried, yet it would have been the easiest, most non-invasive way to deal with it. You're still going to continue to play your big, lovely Epiphone archtop guitar.

CHAKO: That's true, I'm going to move to a heavier gauge string now [OB guffaws], I'm going to use an acoustic string now electrically. I can't emphasize enough how important it is to do the exercises, to be aware of what Pat is talking about concerning thumb position and adductive movement of the fingers, keeping the knuckles together. Because I think you can do quite well on your own if you know what to look for.

O'BRIEN: That's what I was saying earlier with Tom [Singman]. If you get someone who's learning an instrument—such as in music school—if you give them some very basic information about what the hand can do and what it can't do, they can use that knowledge to make their own choices. It's very powerful information even if you only know the most basic points.[1]

[1] See Patrick O'Brien, "Monologue on the Left Hand," *JLSA* XLVIII (2015): 9ff., for a transcription of Patrick's videotaped description of his adduction exercises. See also the tablatures of these exercises in *JLSA* XLVII (2014): exercises 1-4, in the article "Lessons with Patrick O'Brien."

Teaching the Student, Not the Diagnosis: Principles of Pat O'Brien's Technique and Pedagogy

By Daniel Rindler

One year after a successful surgery cured me of severe wrist pain and allowed me to return to playing classical guitar, I found myself in more debilitating wrist and hand pain than ever. It was 1993. I was an NYU music education undergraduate, having dropped out of a conservatory with tendinitis. I had already become enchanted with the lute and its repertoire. This led me, thankfully, to Pat's doorstep.

Onset of Disability

A few years earlier, upon graduating from a performing arts high school, I developed severe pain in both wrists, and also elbows, hands, and fingers. Not only was I unable to play guitar, but I had trouble tying my own shoes. I was diagnosed with tendinitis, but my doctors admitted they were puzzled when I didn't heal after many months of rest, ice, ibuprofen, and physical therapy. Perhaps I would "simply have to quit playing," they suggested. After three years of pain and a long stint of retraining my technique at a performing artists clinic at Roosevelt Hospital, I had an MRI scan and an "occult ganglion cyst" was found in my left wrist. This is a cyst that commonly forms on the wrist just below the back of the hand. It was termed "occult" because it wasn't visible without an MRI, unlike most ganglion cysts that are quite visible to the naked eye. This cyst, they said, was the source of my trouble and the answer to why I hadn't improved. Surgery was offered as the only solution. The surgeon was excellent and removed the cyst from my wrist, and not long after I was back to playing and quite happy about how good I felt.

But it seemed that a "cure" wasn't what I needed. One year after the surgery I was in more pain than ever and completely despondent. I stopped playing for a few months. I had come face to face with the fact that the problem was in the way I used my body to play the guitar, not something a surgeon could simply cut out. Also, the technical retraining I'd done at the performing arts clinic simply hadn't been enough, and I was clearly still playing in a way that was hurting my hands.

JLSA XLIX–L (2016–2017)
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With a little time off to rest and soul-search, it occurred to me that I was almost exclusively playing lute, vihuela, and early guitar music transcribed for classical guitar. I decided to make the switch from modern guitar to the lute and called a teacher I found in the classifieds of the *Village Voice*. I found the address he gave me in the flower district of Manhattan, climbed some rickety steps, and found myself face to face with Pat O'Brien, with his long beard and ponytail, in a studio filled with instrument cases and stacks of music and books on early music spilling out on every surface.

Retraining with Patrick

My first lesson with Pat was not unlike a doctor's consultation in some ways. We carefully talked through all my symptoms and interventions taken thus far. I had acute pain in both wrists, my thumbs and lines of pain along the tendons. My elbows were inflamed, my shoulders cracked when shrugged, and I had back and neck pain to boot. (The physical therapists at the performing arts clinic had told me I had the body issues of an old man though I was only 22—not helpful, but memorable.)

My notes from my early lessons with Pat are a mix of musical and therapeutic suggestions:

- Practice right-hand finger movements with and without theraputty
- French tablature practice
- Buy capsaicin cream
- Practice Attaignant's *Haulberroys* (#65 in the Daniel Heartz 1964 ed.)
- Slow movements to warm up before playing, and ice after

Lessons with Pat were a little like training with Mr. Miyagi from the movie *The Karate Kid*. I went in with the goal of learning something that seemed fairly straightforward—for Pat to show me how to play without hurting—and found instead that he had much broader plans for what to teach me, and how to invite me to learn. Of course, instead of a movie actor, Pat was the real deal. The lessons were intense. When I injured my hands, I had dropped out of a conservatory, and lost music as a center of my life. Working my way back to playing was filled with emotion for me, and Pat understood that. The lessons were also intensely long! For $60, Pat would teach a 90-minute lesson which was already a low rate in NYC circa 1993, but if his next student didn't show, my lesson would become three hours long, and many times would last longer than that—sometimes going until his wife Mary called him to come home.

Pat's interests were seemingly infinite and his recall was encyclopedic. In the midst of helping me with my hands and teaching me to play the lute with some level of artistry, I learned a lot about life from him. In a typical session, Pat could cover a large range of distinct topics, such as thumb-under technique, how long to ice my wrists, how to play the accents of a hemiola, how thumb-under could translate into my properly holding my toothbrush, the benefits of using a speedball dip-pen, the popularity of wearing nutmeg grinders on one's belt in medieval Europe, functional anatomy, clawhammer banjo technique (with a fretless Appalachian Mountain-style banjo pulled off the wall for demonstration), discussion of the emotional impact of my hand injury (with tissue box at the ready), and perhaps a little time spent on refining my juggling ability, Mississippi John Hurt's Piedmont blues guitar style, Latin American politics of the '60s, and always the latest gossip from the early music world. I was beyond excited to have found him and learned so many unexpected things. All of that knowledge he shared keeps him in my thoughts. He talked about such a wide range of subjects that ordinary moments in my day bring him to mind such as when I walk by the "butter brick" buildings he taught me the history of in our shared neighborhood of Park Slope, or the rare and delicate Camperdown Elm Tree in Prospect Park.

My path to recovery with Pat was slow, but there were some glimmers of improvement in the first few weeks. Around a month in, I hit a turning point when I told Pat I needed to put the simple pieces he'd given me on hold and just focus on exercises for a while. I needed to focus entirely on the physical task of refining my technique without the added need to actually be musical. Pat agreed, and said he'd been waiting to see if I came to that conclusion for myself. That was the kind of teacher he was. He didn't spoon-feed—he recognized that there were ways his students had to contribute to the learning process. In teaching me, some elements were taught step-by-step, but as in this instance of my putting aside the pieces he gave me, there was ample room for me to shape the path of my learning process with him. This mirrored his own experience—Pat hadn't been taught what he was sharing with me by another teacher—he had sought out the learning himself, out of necessity.

As word spread in the NYC music community that Pat had found his way out of pain and had begun playing again, other musicians began to send him students who were in pain. He never intended to fill this role, but fell into it in this way. Many students who came through the door were suffering with issues that had very little to do with what Pat himself had experienced, but with his knowledge and creativity, he was able to find ways to help many of them. While he always remained first

and foremost a music teacher and not a therapist of any kind, he helped players of many instruments and even some nonmusicians, such as sign language interpreters, out of debilitating hand pain.

As I progressed through several months of playing slow and careful exercises, I was able to begin again to play simple pieces—Attaignant was my favorite, while also branching out into English lute repertoire as well. I wasn't an overnight success by any means—it had been four years since the pain had begun and I made slow but measurable progress. I still iced after each practice session and often felt as if I'd pushed my hands too hard. Pat helped me to get back to functioning when no doctor had, but I never felt 100 percent cured. Still, within a few years of working with him I was playing pieces that seemed unattainable a few years earlier and only dealt with minimal discomfort and occasional pain flare-ups. While I still had some pain, I was largely able to manage it, and had begun to play the theorbo in addition to renaissance lute. I had attended the first meetings of the NY Continuo Collective, and a whole new world of music and ensemble playing opened up to me through that experience. After six years of weekly lessons with Pat, I was playing well enough to audition and be accepted to Indiana University for a master's program in Early Music Performance Practice, where I studied lute, theorbo, and baroque guitar. In the intensive setting of a conservatory degree, I found that what I'd learned from Pat helped me to function very well, but I had enough discomfort and occasional pain that I decided, finally, that a career as a professional musician was not the best option. Instead, I began to look for a way to help people in a similar way to how Pat had helped me.

"School isn't a particularly good place to go if you want to learn something." Pat O'Brien

Pat was an autodidact, an incredibly motivated "self-learner." While at Indiana University, I came across the work of another autodidact, Moshe Feldenkrais, in the form of Feldenkrais Method classes taught by a practitioner of the method. As I read Feldenkrais' books I found the Feldenkrais approach to experiencing the interconnectedness of the parts of the body, and the body-mind connection, to be perfectly aligned with what I'd learned from Pat. It was so helpful, and so fascinating, that I went on to become a practitioner of the method, and now work with many musicians, usually to help them out of chronic pain but also to help them improve areas of their playing that they feel stuck in.

In the following paragraphs, I will share some of the basic elements of Pat's technique as it was taught to me, and view it through the lens of

a little more than a decade of time as a Feldenkrais practitioner. One of Pat's gifts was to personalize his teaching to each student. He didn't see his work as a technical approach that could be easily codified and told me as much when explaining why he'd never published a book about his methods. My own work with musicians follows this model as well. However, there are some basic ideals of technique that I believe ran through Pat's work with most students. I'm going to detail a few of them here. You can find photos of Pat demonstrating some of these concepts in *The Art of Practicing* by Madeline Bruser.

The jewel in the crown of Pat's technique was the idea of moving from the base of the fingers, as referred to above (the idea that was reinforced by his meeting Andrés Segovia among other older musicians). This movement was one "key" that Pat found helped people find a path out of repetitive strain injuries, as well as focal dystonia, which is not simply a condition of inflammation such as I had, but a neurological condition in which the fingers either contract involuntarily or don't respond or "stick" when certain patterns of movement are made.

Pat liked to say that he had solved the ancient zen koan, "What is the sound of one hand clapping?" By bending from the base and middle knuckles of one's hand but not the tip joints, you can actually audibly clap your fingers to your palm. That's not necessarily recommended if you are having hand pain, but it illustrated the point that one could move the fingers forcefully and efficiently by initiating the movement from the base knuckles rather than by, as many people do, initiating the movement from the tip joint. Most people, when they think of bringing the fingers to the palm, begin by bending the tip joint of the fingers and the other joints follow suit. This may seem a trivial difference, but anatomically it engages an entirely different pattern of muscle contractions.

To illustrate, try this experiment. With your left hand, squeeze your right forearm near the elbow where the muscle is the thickest. Hold the muscle firmly in the left hand while you make a fist with the right hand fingers and thumb. The first few times you try it, initiate the movement by bending the tip joints—i.e., the knuckles closest to the fingertips. Do you feel how the muscles of both the top and bottom of your forearm contract and push against your left-hand fingers? This is an unusual muscular mechanism, as both sides are contracting. This co-contracted pattern is almost as if one is pressing both the gas and brakes of one's car at the same time. The two muscle groups work in opposition to each other, and the fingers can make a very forceful movement. It is very strong but gets tiring—Pat talked about it as the "monkey hanging

from a branch" grip. He explained to me that it was a great mechanism when one was hanging from a branch, but was a greatly excessive use of force for playing the lute.

Now, again use your left hand to squeeze your right forearm in the same place. This time, fold your fingers first at the base joints nearest the palm, and then at the middle joints of the fingers. Don't bend the tip joints at all if possible. Now you will feel a marked difference in the way the muscles of the forearm contract. The muscles in the inner side of the arm contract and the muscles of the outside of the arm lengthen and therefore don't bulge into your hand. In this second pattern of coordinating the fingers, while one set of muscles contracts, the other relaxes—what is referred to as an agonist/antagonist relationship. Next, as the fingers uncurl and return to a resting position, the muscle group that contracted to flex them now lengthens. In the first (monkey on a branch) example, there is much more time spent with both sides of the muscles contracted and little time at rest.

Given the thousands of small movements of the fingers needed to play one's instrument, using this second, more efficient coordination of the hand and arm, in which one side is always at rest, was crucial for my ability to avoid or recover from injury. It seemed clear to me at the time that this movement of the fingers was the key to unlocking my tendinitis. It wasn't a cure, but as I refined my movement, the pain became less and less.

This movement is accomplished through a combination of muscular contractions, including one group of tiny, unusual muscles in the hand called the lumbricals (from the Latin for "earthworm"). They are unusual, in part, because they do not attach to bone as most muscles do. They contribute to our sensation of the movement of our fingers. Dr. Kerning Wang writes, "because it is spindle-rich, the lumbrical muscles play an important role in the sensory feedback of the distal interphalangeal, proximal interphalangeal and metacarpalphalangeal joints [all three joints] of the fingers."[1] Wang goes on to say that the lumbricals are involved in "quick, precision movements of the fingers."

With the hand that plucks the strings, one can learn to brush the fingers across the string with the tip joint passive. Depending on the mobility of one's joints, the tip may passively bend backward as it contacts the string, as if it were a paintbrush. One can learn to make a fantastic sound this way, strong, but round and warm toned. The downside

[1] Kerning Wang, MD "A Biomechanics and Evolutionary Perspective on the Function of the Lumbrical Muscle," *Journal of Hand Surgery* (2014).

is that it takes more time and practice to learn not to brush up accidentally against adjacent strings, which is easier to do when the tip joint isn't actively flexed.

Pat had me mimic him to learn the basic movement of bending at the base joint of the finger to pluck the strings. It was quite strange at first since my mental image of how I initiated the movement in the past had been centered around the sensation of the tip joints curling. Now the tip joints were to remain passive and I had to find how to move in an entirely new way. Pat also had me practice the movement of my right-hand fingers with theraputty, a palm-sized glob of rubbery putty to squeeze without curling the tip joints. At the lute, I found it easiest to move this way with my right pinky. It stood to reason, as it was the finger for which my pattern of habitual clutching at the strings was not practiced. Even though I wouldn't be using my pinky to play the strings, for now Pat strongly encouraged me to practice the movement with my pinky and let my other fingers learn from its sensation, a strategy I use with my Feldenkrais clients in different contexts each day.

The other challenge of this right-hand technique was learning not inadvertently to brush the strings adjacent to the course I meant to sound. Pat had me play simple right-hand-only exercises to become accustomed to allowing my tip joint to brush back without touching the next course. I remember many times in lessons looking down at Pat's fingers as he demonstrated a phrase of a piece, and seeing his fingers bending so purely at the base and middle joint only, and realizing I didn't quite have it yet. For the fingers not to hit the next string, it was essential to find the angle of the hand and arm and the height of the wrist that allowed me to play cleanly. As I did, my tone became rounder and fuller and, satisfyingly enough, the sound I produced began to become a guide towards refining my technique in addition to what felt better for my hand.

For the fretting hand, the same basic idea is applied of bending the fingers from the joints nearest the palm, but the tip joints generally aren't allowed to bend back. Here, one holds the hand in a position so that the base joint of the fingers is above the fingerboard, or nearly so. Then the hand is in a position to move from the base joints, and there is increased leverage for pressing down the strings with ease. In my playing, this led to a sense that my fingers were approaching the fretboard from "high above" rather than wrapping tightly around the edge of the fretboard. When I was positioned well, I could see perhaps the top eighth of my palm when looking down at my left hand while playing. I sometimes thought of it as my left-hand fingers standing tall on tiptoes.

More Principles of Patrick's

There were many other elements to Pat's technique that he shared with me over the years I studied with him, though for this article I'll detail just a few. Many of the concepts of his technique fall into the category of creating clear lines of force through the skeleton for maximum efficiency. When force doesn't travel in clear lines through the skeleton, the result is one bone shearing (displacing slightly) in relation to the next one and a loss of efficiency and greater potential for injury. In working with Pat, I learned a lot about avoiding these shearing forces in the fingers, wrists, and arms. Below I give details of how this applies to the wrists.

Even when practiced ideally, the playing position for plucked strings is much more anatomically challenging than for instruments played in a more symmetrical position, such as keyboard instruments. Many players add unnecessary strain and wear to their body (as I did) with their arm positions. My right wrist, especially when playing thumb-out, was habitually side-bent at an angle ("ulnar deviation") to bring the fingers to the strings, thus taking the tendons of the right arm around a curve that constrained their capacity for free movement.

Similarly, my left hand bent forward at the wrist, sometimes at an extreme angle. There are moments, as when spanning a large number of frets, when this is difficult to avoid. However, like many players, I often kept my left wrist bent in this way unnecessarily, not reserving it for rare moments. In this position, as Pat once explained to me, the tendons rub back and forth over the distal head of the radius and ulna (the two bones of the forearm at the wrist), almost like pulling a string back and forth over a rock. The results can be reduced ability in playing, or creation of inflammation (tendinitis) and, as I learned the hard way, can lead to a ganglion cyst in the wrist.

It was extremely challenging to find a less flexed position of the left wrist, especially for certain chord shapes. One key to allow for this position was the hinge bar: a kind of signature move from Pat's technique. For many chords one can maintain a more relaxed position by fretting a few or even the single top course with a partial bar of the first finger. In the case of playing just the 1st course, one frets the string with the middle or base segment of the finger rather than the tip. This allows for a more relaxed wrist position and more freedom for the other fingers. Pat used the technique often.

About a mile downtown from where I worked with Pat, and worlds away musically, young composers such as John Zorn were creating music that was labeled "totalism." Totalism attempted to include

many musical influences and styles, and was wonderfully chaotic. In my early twenties I found it to be exciting, daring, thought-provoking, and occasionally moving. I don't know if Pat was aware of that music at all, but I propose that a case could be made for calling Pat a "totalist" for the way he approached early music and teaching. In the midst of his swirl of information and influences, he had a singular focus: he always came back to developing as a musician himself and to supporting those around him to do the same. He brought forth all his interests and experiences—including his understanding of anatomy and technique—to influence that singular goal.

"Health is the capacity to recover from shock and to realize our unavowed dreams." Moshe Feldenkrais

I initially sought out Pat to help me get out of pain, but as it turned out, he had larger goals for me than I had recognized for myself. Pat both brought me back to expressing myself through music, and in the long run influenced me to find a way of employing my own curiosity about people, my past experiences, and interest in a broad range of subjects to enrich my own teaching. Now I, too, work with musicians and others who are seeking to get out of physical pain or anxiety that is limiting them, and they often stick around after the pain is gone, just as I did with Pat. They begin to realize that the relief from pain they initially sought was just a small part of a larger need to feel comfortable in their own skin, and to feel a certain internal structural integrity that carries them physically and emotionally through good and difficult times in their lives. This was Pat's gift to me and all of his students, and which I hope to carry on in some way to support us from where we were, and then to generously give us something bigger and richer than we knew we were looking for.

Recovering from a Performance-related Left-hand Injury

By Douglas James

I first met Patrick O'Brien when he gave a talk at the University of North Carolina at Greensboro in 1984 or '85. I can't remember what subject he lectured on, or if I took my first lesson with him then, but I do remember one thing that he said to me at that time that really stuck with me. To paraphrase: "It's not that John Williams does what you do better than you, it's that you and John Williams aren't doing the same thing at all."

My Early Career

My journey with the guitar began as a self-taught electric guitarist, starting out when I was about 12 years old. I was playing various popular genres professionally in and around my hometown of Charlotte, North Carolina, on a regular basis by the time I was 15, and full-time from age 17. Since then I've always managed to make a living in music with a varying mix of gigs, concerts, and teaching. I began serious study of classical guitar at age 19, and began taking lessons in what I now would call the "Segovia system" as it was taught in the 1970s. My teachers during this period in Charlotte were Gus Toole, Michael Mosley of UNC–Charlotte, and Jesus Silva of the North Carolina School of the Arts (now UNC–SA). My technical studies were focused almost completely on the right hand, with lots of rest strokes in the fingers, and all free strokes with the thumb. There wasn't much discussion of the left hand during these years, as I was already in possession of a reasonably facile if overly athletic left-hand technique from my earlier experience on the instrument. In any case, during these years my focus was on getting my right hand to "catch up" technically with the left. Pat O'Brien was the very first teacher I had who had much to say about my left hand. More on that later.

I graduated from the University of North Carolina at Charlotte in 1979 and obtained a master's degree from UNC at Greensboro in 1983, earning both degrees in classical guitar performance. It was also in 1983 that I began a four-year tenure as a visiting artist-in-residence for the North Carolina Arts Council. This was a full-time salaried position administered

JLSA XLIX–L (2016–2017)
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through the community college system. From 1983 to 1987 I gave hundreds of performances on classical guitar, and practiced many hours a week to develop and maintain my performance repertoire. I also played electric guitar (bass and standard) in commercial settings during those years.

Study with O'Brien

Very soon after meeting Pat, I began flying to New York City about once a month for lessons. This was made economically practical by People Express airline, which had round-trip fares from Greensboro to Newark for less than $80, and by Pat generously allowing me to sleep on the large beanbag chair in his midtown studio. The lessons were mostly spent reworking my technique in both hands, with the goal being to make my playing more efficient in general. In these initial sessions, his emphasis was equally devoted to the right and left hands.

For the left, he gave me adduction exercises that I still use all the time with my own students. These consisted of:

1) Two- and three-finger combinations working on one string to ensure that the fingers adduct instead of abduct.
2) Isometric exercises for the adductor muscles in the hand between index and middle, and ring and little fingers.
3) Arpeggios across four adjacent strings using the 24 possible permutations of finger combinations.

The right-hand work focused mostly on repositioning the hand so as to be more over the treble strings, using fewer rest strokes with the fingers, and developing a thumb rest stroke to go with that position.

Progress was gradual and was better manifested in my newer repertoire than in the older. I was much more attentive to my right hand as it seemed to me to be the weakest link in my technique.

The Injury

I'd worked with Pat for just over a year when tendinitis symptoms developed literally overnight in early July 1986. I had recently started using a particularly large Spanish guitar with a 667 mm scale and a fairly stiff action, and had been practicing late into the evening one night after playing a long jazz gig on bass guitar. The next morning I experienced searing pain in my left hand just from lifting a towel off its rack, coming from badly inflamed tendons and ligaments of the index and middle

fingers. More specifically, there was a sharp, burning pain in the index flexor tendon in the finger but also into the hand, and was directly associated with flexing the index finger. (I still have a bit of a node on the index finger tendon. If I move my index finger from the metacarpophalangeal [MCP] joint, I can feel that node if I probe with a finger of the other hand.) The tip joint of the middle finger had similar pain, but seemingly in the collateral ligaments. All of these pains were quite intense—not something one could easily ignore while playing guitar.

Needless to say, I was terribly alarmed and upset. I immediately telephoned Pat, who spent over an hour with me "talking me down." Rest, ice, ibuprofen, and assurances that it could and would heal were the prescription and prognosis.

The first suggestion one usually gets for treating a repetitive use injury is to immediately stop doing whatever caused the problem for at least a while. However, not playing at all wasn't an option for me at that time as performing was my primary source of income. So, I soon replaced the Spanish instrument with a Millennium-style guitar built by Thomas Humphrey, the famous New York City luthier. The Humphrey guitar was a lot easier to play for the left hand. The scale was still a little long at 660 mm, so subsequently I had Humphrey take the string length down to 650. Once shorter, it took even less effort to depress the strings, and it was easier to maintain the finger adduction that I'd been incorporating in passages requiring left-hand stretches. Since that time I will not play an instrument whose action is stiffer than I like. If anyone hands one of these to me to try, I give it back pretty quickly!

As mentioned earlier, I had been working with Pat on left-hand efficiency, but my main efforts were on refining my right-hand technique, and so the left hand had gotten only secondary attention. My technical practice emphasis now switched almost completely to the left hand. For approximately the next two years, I very deliberately set about fully incorporating the left-hand efficiency principles that I had learned from Pat, while continuing to perform in spite of my compromised condition. I set aside my most left-hand-intensive literature, and spent a lot of time learning to fully apply Pat's principles of left-hand technique that were based on adduction, light finger pressure, and use of the left arm weight in depressing the strings. During that period I had to deal with other limitations even after culling my repertoire. For example, I was not able to use vibrato as freely as I would have liked without pain, especially with the middle finger. The index finger felt discomfort from only moderately long periods of barring, and even simple but fully flexed positions, such as the one used to play a first position C major chord, could hurt. Both

of the injured fingers would really let me know if I was doing something inefficiently—it was the pain that reminded me to lighten up.

Pat called my overall affliction tendinitis. He spoke only a little bit about his own experience with the tendinitis he had contracted in his younger years, as he apparently didn't like to talk much about it. He attributed my problems to trying to play too large an instrument while using too much effort in the left hand, and then trying to force things to happen through sheer will. Prior to the injury I tended to believe that if I only practiced enough, everything would get better. This idea changed completely to a philosophy that all practice should be smart practice: if a passage is physically difficult as opposed to just complicated, I'm either doing something wrong or I shouldn't be doing it at all! In my experience with tendinitis, pain or the lack thereof would tell me when I was or wasn't using good technique. Guided by Pat, I used the perception or absence of pain to focus my recovery and retraining. Simply put, if I was playing with too much effort in my index or middle finger, I would feel pain. I was able to keep practicing and performing during that time through the efficiency gained from the adduction exercises and general awareness of how much effort I was using. It took about three years for my left-hand pain to completely fade away. Today, over 30 years later, I consider myself completely recovered from this injury. Within reason, I am not limited by this sort of concern in the amount of time that I can spend playing the instrument. Furthermore, I always teach these efficiency principles to my students, and to the best of my knowledge none of them has ever suffered left-hand injuries.

The Exercises

Pat's approach to left-hand efficiency was based on three principles:

1) Each finger should press no harder than necessary in order to keep the strings against the frets.
2) The 1st and 4th fingers should maintain as upright a posture as possible. To accomplish this, one has to use the adductor muscles in the hand more than the abductors. Otherwise, the abductors will cause the fingers to fall outward, and so have less reach than if they were upright. This also can cause the finger to press harder than when it's upright as lateral effort is less efficient than direct downward effort, much as when hammering a nail one gets better results bringing the hammer straight down as opposed to coming down at an angle.

3) The weight of the arm should be used to help in pressing the strings. To this end, supination of the arm is more efficient than pronation. In other words, if one is sending the elbow out away from the body, that weight is being supported by the upper arm and shoulder, and therefore not assisting the fingers in pressing the strings.

These principles do wonders for left-hand efficiency when all three are practiced. Most professional plucked string players today play this way, even if they don't necessarily think about their technique in these terms. It's important to note that in the mid-1980s, lute and guitar pedagogy had not yet advanced to the level it enjoys today. I had never encountered these concepts in private studies, master class settings with famous virtuosi and pedagogues, or in discussion with colleagues before Pat introduced them to me.

Pat gave me three exercises with which to build these principles into my technique, described below.

Single String Pulls

The purpose of this exercise is to develop awareness, control, and strength in the adductor muscles of the 1st and 4th fingers. In the VII position, place 1st, 2nd, and 4th fingers on three consecutive frets of one wound string. While pressing lightly with all three, pull the proximal interphalangeal joint (PIP, the joint in the middle of the finger) of the 4th finger toward the 2nd finger such that it stands perpendicular to the fingerboard, or leaning slightly toward the 2nd finger. Help it along with the right hand if necessary at first. Hold this position for a couple of seconds, and then relax. For the index finger, place the 1st, 3rd, and 4th fingers on three consecutive frets, and perform a similar activity with the index finger pulling toward the 3rd finger.

As one gains facility with these exercises, they can be moved down the neck to lower positions where the distances involved are greater. Similarly, they can later be done with all four fingers placed on consecutive frets. The technical result of this is that one can reach for notes with the outer fingers without the PIP falling to the outside of the hand, which in turn causes the tips of these fingers to have less reach.

Adductor Isometrics

This exercise is performed away from the instrument, and can be done while either sitting or standing. With the arms hanging from the

shoulders in a relaxed position, flex the elbows to bring the hands up, with forearms at about a 45–50 degree angle from horizontal. With a straight wrist, allow the fingers to fall into a flexed position while still being relaxed. From this position, press the PIPs of fingers one and four against the 2nd and 3rd, making certain that the pressure is being exerted by only the PIP as opposed to the entire finger. Developing the adductors in this way will certainly help in making progress with the other two exercises.

This exercise can be done for a minute or less several times a day. With practice, one should be able to give a pretty strong squeeze—you can check this progress by squeezing a finger of the opposite hand. Usually when I first introduce this exercise to students, they have next to no grip strength, and are quite impressed with how tightly I can squeeze using my adductors. Pat once jokingly told me that his left-hand, 4th-finger adductor was the only toned muscle in his entire body.

Four-string Arpeggios

Four-string arpeggios using the 24 possible permutations of left-hand fingers appear below.

Fingering patterns:

1234	2134	3124	4123
1243	2143	3142	4132
1324	2314	3214	4213
1342	2341	3241	4231
1423	2413	3412	4312
1432	2431	3421	4321

Begin in the VII position. Play across the fingerboard from 6th to 4th strings ascending and descending (that is: 6, 5, 4, 3 ascending, then 3, 4, 5, 6 descending) using the right-hand fingering *p i m a m i m i*. For all patterns each left-hand finger stays one fret distant from each adjacent finger. Place each finger as you ascend or descend to the next note, and hold each of the four fingers down until the four-note chord is complete. Then, do the same pattern descending. Note that your left-hand fingers will be creating a "mirror image" of the ascending portion of the exercise when descending.

After playing 6th through 4th in this way, repeat the pattern in the same position on 5th–2nd, 4th–1st, and then 5th–2nd again. Then, shift

one position lower on the neck, and repeat the entire process. Continue until you reach the first position. Repeat the process again with each of the 24 patterns.

At all times focus on playing on the fingertips using light, equal pressure with all of the left-hand fingers while playing *mf* or louder with the right hand. Try to keep the 1st and 4th fingers as upright as possible utilizing the adductors. Keep the left arm in a supinated posture, with the elbow hanging much as a dead weight. Allow this weight to do as much as possible of the work in pressing the strings.

Therapy for a Flamenco Guitarist

By Antonio Madigan

I first heard about Pat from Rafael Benatar, my classmate in Hopkinson Smith's continuo course in Hall in Tirol, Austria. Around 1984 I had begun to experience some frustrating goings-on in my right hand; my middle finger kept missing the string, and I couldn't play an arpeggio properly. Rafael had run into Leo Brouwer in Madrid. Leo had put his brilliant guitar-playing career on hold after a Russian tour. He had refingered his repertoire because of a broken *m* nail and had begun to have the same problem I had. He told Rafael about someone in New York who knew how to deal with it, and who even knew that it had a name.

Remember that back then not a great deal was known about focal dystonia. All kinds of musicians experienced mystifying difficulties, but we tried to keep it quiet, hoping it would go away, dreading the day someone would notice that our playing had badly deteriorated. Practicing only made it worse. I really knew I was in trouble after I played the German première of *The Lighthouse* by Maxwell Davies, which I had learned in a week. You have to double on banjo for that one. Ten-hour daily practice sessions bashing the poor music into your muscle memory is not a good idea at the best of times, and my life back in the mid-eighties was pretty much in disarray on the personal side, combined with a painful back injury and incipient depression. And now this. Playing the guitar had always been my refuge, the one thing I could always do even without thinking. Therein of course lay the root of the problem. Most baffling of all was that there was nothing you could put your finger on (literally) and there was no pain.

So, thanks to Rafael and Leo, I found myself, shortly before Christmas 1986, in a dusty little room at the end of a narrow corridor in a ramshackle building west of Sixth Avenue crammed with books and music and a fluctuating population of instruments of all descriptions. In the middle of all this sat a round gentleman who looked exactly as Falstaff would have looked had he been transported from Merrie England to Brooklyn and had lived through the sixties. In this little room I spent every Wednesday afternoon for the next 10 years.

He had a few strands of long hair pulled back in a ponytail, a big bushy black beard, a gap-tooth grin, a pockmarked nose, somewhat purple in hue, and a permanent twinkle.

JLSA XLIX–L (2016–2017)
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What was instantly comforting was his voice, a high, somewhat breathy tenor speaking with an indeterminate accent that sounded almost British at times. He was patient and gentle. It was very hard to tell when he was irritated. There was merely a subtle change in the atmosphere. That was it. But it was enough.

"Let me see what you're doing." He handed me a guitar, took a swig from a large beverage he always seemed to keep close by, and crouched down on the floor so he could see my right hand from underneath.

"I bet you had a really good tremolo." Typical Pat—find something positive to say. Right away I saw that it was Pat's take on the situation that made him such an effective teacher. It was as if he were saying, "OK, you've got a problem but it's not the end of the world, I've seen this sort of thing before."

The first thing we did was to get the right-hand fingertips loosened up. Instead of the still claw I used to control the fingers with, he had me bend the tip joint slightly backward as it moved through the string. The sound came as the string escaped from the gentle pressure of the finger seemingly all by itself. The finger continued to move from the middle joint into the palm, like the follow-through when you hit a golf ball, and was then allowed to return to its original resting length, ready to move through the string again.

Getting this to happen took some time, but it was crucial. Getting the tip joint to relax together—combined with performing exercises using middle joint (which at first I couldn't control at all) will activate the big muscles on the outside of the forearm and not the gristly stuff on the inside of your wrist that still joints will activate. Pat's right-hand fingers actually did bend back a bit at the tip joint, and you could see this when he would join his hands before his nose in a prayerful gesture that actually meant, "Stop your chattering and listen to what I'm telling you."

"*Allow* the sound to happen, don't *make* it happen, think how, not what, soft on the outside, strong in the center," he said. All these concepts Pat took from a variety of disciplines, martial arts not the least of them, and applied them to plucking an instrument. He had an exercise he called the "zen thing," which consisted of making sure the finger returned to its length by actually hitting the string with the back of the nail on the way down.

Then there was the thumb. "The last thing that got tacked on in evolution was the opposing thumb and they still haven't got it right." Pat himself played lute thumb-out, but sometimes he taught thumb-under, especially on renaissance lute. This approach graduated to thumb-out as instruments started acquiring more bass strings toward the bass. I had a big ball of muscle at the base of my thumb on the palm side basically caused by

misuse playing flamenco. "We're going to let that atrophy," he said, which meant I would be starting to favor the muscle between the thumb and the index finger big joint on the outside of the hand. To activate this, the thumb describes a counterclockwise circle out and over the index finger on bass notes, marvellously rebalancing the hand.

He discussed pronation and supination, as applied to both hand–arm–shoulder relationships. He pointed out that the wrist should favour the little finger in the left hand, twisting slightly so it was closest to you and the index farthest away. This relieved a great deal of pressure on the left thumb.

Pat always worked from the premise that the soundest and most natural technique was that of the renaissance lute, the early 19th-century guitar being the lute's direct descendant at least as far as the right hand was concerned. Put a guitar in any beginner's hands and almost invariably they will place the thumb inside and lean the little finger on the body of the instrument. This meant that the use of *a* is very limited. In fact, it is perfectly possible to play a great deal of music from the early 19th century using only *p*, *i*, and *m*. Misuse of the *a* finger can lead to many problems, as many pianists have found out.

Segovia's refingering of the Sor's études was, therefore, regarded with grave suspicion by Mr. O. Fortunately all of Sor's output was, in those years, being published in facsimile, and thanks to Pat we were able to see what Sor and his contemporaries really wanted us to play.

Pat's idea of reorganizing your technique and your musicality by studying early, lighter string instruments ran counter to uptown teaching methods. He knew the lute to be the source of all that was good about plucked instruments down through the centuries. It didn't matter if you played Mississippi John Hurt (he taught me how to do that) or the Britten Nocturnal (that one too). Pat always found the easiest and most natural way and saw the connections. In reconnecting your damaged synapses and nerve endings, he gave you back the best part of yourself.

Having closely observed the matchless technique of the most natural lute player of our time, Paul O'Dette, Pat knew exactly what was necessary in any given situation and could pass it on with incomparable generosity.

"There ya go," he'd say as you walked out of that room with a load of new music under your arm and, likely as not, a new instrument. "There ya go," he'd say after he had just taught you a fail-proof way to play continuo in about 20 minutes.

And there we all went.

I owe him everything.

Conversation between Patrick O'Brien and Antonio Madigan, c. 1991

Videorecorded by Tom Singman
Transcribed by Douglas Alton Smith and Michael Miranda

Introductory playing by Tony as a younger and then as a somewhat older musician.

PATRICK O'BRIEN: I promised to do this [make a video recording of Tony] for my friend [Dr.] Frank [Wilson] some day.

This is Tony Madigan. He had focal dystonia and consented to talk about it, much as he would like to forget it for the rest of his life. The primary thing is to see that he is back and able to play. Tony is a composer and pianist ...

TONY MADIGAN: I had just moved to New York and was very fortunate that Pat was here because I don't think there was anybody else in the world who was capable of treating this particular affliction, which I found out during almost two years of working with him was actually quite common. Unfortunately.

I think the hardest thing about our work together was letting go in two senses: in my [right] hand, of course, but also letting go of my investment in being a guitar player, and had to give up the idea completely that I was a guitarist. This, after 20 years of playing, was very hard to do. It was my identity.

That's the hardest thing, because when you start to let go, that's the beginning, paradoxically, of really doing something about it. I remember all the ways I used to go about playing and working on problems by very direct means. It was the time-honored procedure, thinking that if I practice 10 hours instead of five, I'll be able to fix this.

O'BRIEN: When did it start? When did you first begin to notice?

MADIGAN: I first began to notice it in about 1986 when I had big emotional stress in my life, both personal and professional. I was trying to hold down three different jobs. I was playing vihuela, romantic guitar, and was also playing modern music in a very loud German orchestra.

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O'BRIEN: You had been doing that in Germany for some years at that point.

MADIGAN: Yes. Just doing way too much and not thinking about how I was doing it.

O'BRIEN: What did you start to feel?

MADIGAN: First, I had scoliosis in my back anyway and that started really acting up. Then I got a herniated disc in my back. I first started to feel a lack of flexibility in my right hand, and then serious problems with my middle finger. Eventually, it wouldn't even get near the string.

O'BRIEN: You aimed it and it just didn't hit that note?

MADIGAN: Right.

O'BRIEN: Did it stay in the hand or sort of out?

MADIGAN: It stayed sort of outward. At the end I couldn't play a scale, couldn't play an arpeggio passage. And a very alarming thing started happening, which is that my thumb—that [MCP] joint—seemed to absolutely go berserk. It started flying around in all directions. To fix it I really jammed it into my hand. There was no pain, except in here [he points to his temple], but it caused distress because not only my livelihood depended on it, but also my investment, and I had no other identity apart from being a guitar player. I had all these instruments and couldn't play them when I should have been at the peak of my powers.

I moved away from the city where I lived and came to New York. After about six months of not playing at all, I came to this room.

O'BRIEN: With that very guitar.

MADIGAN: The first thing was a very tight right hand. The coordination between the thumb and the rest of the fingers was not working at all. It was very jammed up right in there [pointing to the base of the thenar eminence in the palm]. A lot of tendons are going in here.

The difficulty was to find out what was the cause of all this, where did it start? That took over two years to find out since, of course, all these things are interrelated.

O'BRIEN: When did it start to improve? How did you feel, what kind of evidence did you have that it was getting better? You had to go on faith for a while.

MADIGAN: I knew something was happening when one day I had been alternating with thumb and index finger and could do it without disturbing the rest of my hand. I remember saying to Pat, "That's it, that's a week's work right there." The lesson that day lasted seven minutes.

I started to notice the whole relationship of the thumb and the fingers. So I got a renaissance lute and we started reorganizing the thumb.

O'BRIEN: We tried the 16th-century lute technique of playing thumb-under. I should parenthetically note that Tony is interested in lots of different kinds of music and has played some 19th-century guitar and early music of other kinds. He has played a lot of different instruments in the course of composing for them. So this is an extension of a previous interest in a way.

MADIGAN: Very much so. I'd played them basically all the way I'd played them on guitar, so I was getting off the modern guitar. The one I had was a big, full-size Ramirez, which was a problem in itself. We worked with the renaissance lute, where we had to reorganize my thumb-out, and also we had done a lot of work with the little finger down.

O'BRIEN: Tony has a collection of 19th-century guitars and has looked at 19th-century music and 19th-century technique with an eye to playing it in a fairly authentic fashion. So I said why don't we try this idea of putting the little finger down on the top. The very opposite thing happened with Tom [Singman] here; he's always had this thing about putting his fingers down on the head of the banjo. Some of the work we did was getting his fingers off the head. In a sense it was just breaking another part of the pattern and looking at the hand in a different way.

MADIGAN: All this was in the course of a very long time—you can't rush it. You figure I spent 10 years or so doing this to myself. So I got to the point that I could play various little Sor pieces [with the pinky down], so there wasn't ever a period when I couldn't play something.

O'BRIEN: The tabla story is kind of interesting. We were together about a year at that point and your hand was working pretty well. You were taking some lessons on tabla, and you stopped doing that as you were

working on the guitar. But you went back to the tabla one day, and the problem really came back.

MADIGAN: Absolutely. I tried to fill up my time as best I could with activities other than this [guitar]. I thought it was very important to not do the things I used to do on the guitar. I even turned the guitar around to tune with my other hand, so that there was no old habit at all connected with my playing. You can tighten up your hand in a matter of seconds even while tuning.

I thought I would do a whole bunch of other stuff that would be work, like playing harpsichord. And I always wanted to study Indian music, so I thought here's my chance. I played tabla for about a year during the time we were putting my guitar playing back together. Then when my guitar playing got a little bit better playing simple pieces, I thought, "Great." So, one day I took out the tablas, which were sitting in the corner gathering dust, and I started playing, and I just felt absolutely the same symptoms I had a year ago. The thumb just went [fell apart] literally in a matter of seconds.

Thank God I had a lesson that day. I came in and said, "Look what I've done." It all came back: that strange tingly sensation in the hands. The thumb seemed to be somewhere out in the New Jersey swamps, and everything was a mess.

O'BRIEN: I spoke with Frank [Wilson] recently on the phone, and one of the things that he mentioned was that playing a video of someone having a problem caused them to actually pass out while watching it. It's such a panicky issue that they don't want to go back to it at all. Once you've been through this problem, people don't like to talk about it. A lot of people that I've worked with will send other people to me, but they don't want to get in touch with me themselves because they don't want to revisit that horrible time in their lives. You always suspect that the memory is in there, and you can trigger it again. I've had people actually undo the problem, and then get in a couple of really good weeks, and then lose it, and not be able to get back to it.

MADIGAN: It comes and goes for a long time. I think it's a good thing in that what it comes down to is that you really need to know how you do what you do, whereas when you're 20 years old, you don't have to worry about that, you just do it. But 15 years later it's very important to be able to know exactly how you do it—to know exactly how your body works.

TOM SINGMAN: When you lost it, how did you get it back? Once you've made progress and then have a setback, were there any particular steps that you took to reclaim the progress you made?

O'BRIEN: By going back to simple gestures.

MADIGAN: You just go back to the exercises that seem to work, and say to yourself that it's not permanent, I've found it once before. It's there, I know I can do it again. However, I can't go at it in a coercive way, I can't force myself back. You can't use direct means. However, when you lose it and find it again, every time you do makes it all that more secure. The test, of course, is playing in front of people, which is what I did for two years, except that I found the baroque guitar—which was a completely new instrument and had none of the performance associations with the classical guitar—seemed really like a gift from heaven.

O'BRIEN: The baroque guitar involves a lot of strumming, and that's one of the things that you're first able to get back is kind of throwing your fingers in large motions.

MADIGAN: The baroque guitar was an enormous boost. I thought, "This I can do." I could get gigs with it.

O'BRIEN: We played a trio with another student of mine about a month and a half ago in a concert which was really fun.

MADIGAN: I think basically the technical challenge was changing my left hand a bit from the former way of playing, which never gave me any problem. But I'm beginning to find that working on my left hand is clearing up the last of the problems with my right hand.

O'BRIEN: We were working recently on adduction of the fingers of the left hand, and that actually supports some things in the right hand as well. We also worked on freeing the left-hand thumb on the back of the neck. It supports what he's done to free the right-hand thumb as well. What he was doing at one time with the thumb, especially in the flamenco pieces, in which fast bass passages are played with both up and down thumb strokes, caused his thumb to creep inward [toward the palm of his hand] and become very tight behind his hand, and he's now trying to get it loose and outside his hand in its normal place, thereby loosening the hand. That seemed to be an important part of his process.

MADIGAN: There's no particular position because you do want to be able to change positions. The difficulty in the process is not "holding," but keeping a balance between holding and maintaining a position that is not wrong, that is not doing damage, especially holding at the first joint, which is a problem for the classical guitar because you need a whole lot of strength to get a good sound.

O'BRIEN: In addition, we've noticed that over the years, modern classical guitars are being built heavier and bigger all the time, in which case they are louder, but they are more somber in tone and less bright. That becomes a self-fulfilling prophecy, which means once you buy the instrument that is so dark in tone, you have to tighten up and very shrilly hook the hell out of it in order to get a bright enough sound to penetrate. It's technically got a potential for volume, but only if you tighten your hand a lot and get a lot of nail on the string. The result is that buying that kind of guitar leads you in that direction, whereas lighter guitars, such as 19th-century guitars and flamenco guitars and many other types of guitars, are much brighter. So, there is a movement in classical guitar that's been getting the guitar to go in a direction that reinforces a modern way of playing in a very, very tight way.

SINGMAN: That raises something that happened to me when I got my Martin D-28 and started to play bluegrass. Previously I had a classical guitar that I used to just pick folk music on. Now I had this big, gorgeous, steel string guitar with telephone wires for strings, and I started fingerpicking on it, but really it was meant to be blasted with a big, heavy flat pick, at least for bluegrass.

O'BRIEN: That's a very important observation regarding folk music. I don't know if you realize this, but what they do to make a Martin Dreadnought is to make the whole body very much bigger, and then they take the upper bout and shrink it down two frets, so instead of having 12 frets to the body, like a classical guitar, it's got 14 frets. They don't actually shove the neck up, they actually squash the body down. The original intent behind that was to kill the treble chamber of the instrument, and to make it too bass heavy so it could play in string bands. So what you are supposed to do is boom in the bass and go boom-chuck, and you're supposed to get a very thin sound in the treble. So, when you try to fingerpick that guitar, you really dig into the treble.

Likewise, if you get a guitar that is rosewood, it's very stiff and heavy, and you really have to dig into it hard to play. It resists the big

booming pick very well and gives a great sound, but with fingers, it really drives you crazy. What you need then is a Martin New Yorker, or one of those older, smaller Martins, or one of the "O" sizes. That's a parallel case with what Tony is talking about. For the modern classical guitar, they've actually shoved the neck out and made the strings up to 2 cm. longer. Everything is heavier and bigger and just much harder to play. Once you put a lot of aggressive force into it, you think, "Well, this is a much louder guitar," but it isn't really a lot louder. When you get a smaller instrument that's lighter, it's so much brighter that it often projects better. It's more distinct at a distance. It's more audible and clear at a distance. But the bigger instrument seems to be absorbing more energy, and you think that it's a big, booming sound, but it's not really traveling. This is a classic example how you just absorb the language of the instrument itself that you play.

SINGMAN: I remember trying to play ragtime, and this was part of the syndrome of ruining my hands.

O'BRIEN: In ragtime you want the treble to come out, and you are not able to make it happen. It is just putting an idiom on what appears to be the right guitar, but isn't really. That's the bluegrass um-chuck guitar. In fact, when Martin began to make the D-28c, the so-called classic, it had a big, oversized body, but they had pushed the upper bout back out to its normal place, with only 12 frets to the neck, and that meant that it has a rich treble as well as a big bass. That is a fingerpicking guitar. It responds much better in the treble. So, we've been playing instruments and strings that don't respond as well in the treble.

What happens is an odd thing, and here's how it's a self-fulfilling prophecy. You get players who are not very sophisticated who pick up the guitar, especially in America, when they come to college. They've played rock guitar, they have an ear for shrill tone—very, very bright, hard sound. You get them to play classical guitar because the music department says they have to, and then they begin to play classical guitar for the first time, and they have a very uncouth touch. They're sort of smashing the hell out of the guitar. So, what you do is make a bigger, heavier guitar that doesn't sound very bad when they do that. It smooths them out and flattens the effect of what they do. The result is then, of course, if you take a sensitive player and put him on that, he realizes what should happen in the music, and he starts whanging the instrument like crazy to try and make things come out. The instrument is fighting him because, like the compressor when you do a recording,

it's trying to flatten out everything he does and make it sound more suave and even, because it's designed for a bad player. A good instrument is supposed to be real sensitive and it reflects what you do. If you hit it well, it gives you a beautiful sound; if you hit it badly, it gives you an awful sound.

The problem is that awful sound is a downside to the responsiveness of the instrument, and players will say that it is an unforgiving guitar. They say, "Make me a forgiving guitar." So, you make one that's kind of deadish, and they say, "Oh, this makes me sound much more suave." Then any time they want to make any kind of expressive effect, they absorb the necessity to take a tremendous amount of energy to make it happen. And there it goes. You get into a certain kind of trouble.

That happens in so many instruments that are built now for just raw volume, or specifically built to do one job, and they won't do another job. That's classically the case of the D-28, and it's the death of a lot of folk guitarists when they try to fingerpick a D-28. I have a Martin guitar that I fingerpick around the house, I think it's called a 227, it's from the 1870s, and it's what they called "lady's guitar." It has a very narrow body and it was made probably for gut strings. It has very light steel strings on it, and it responds with just the barest touch. It's a great guitar to fingerpick on. They've started to make guitars that are meant for fingerpicking, but for a long while that wasn't the case. What was happening was that the style of guitar in popular music and jazz and folk music has gotten more and more complex in the last 30 years, and sometimes the construction of the guitars themselves hasn't caught up in sophistication with what we're now asking the players to do.

MADIGAN: You can almost feel the symptoms coming back if you watch somebody on another instrument play with something that looks like what you have. The good news is that watching someone who has a technique that really works, and you understand why it works, watching that also helps tremendously. If I could point to a single thing that helped me the most during this time, it would be that I used to go around with a photograph in my head of Pat's hand, and that was tremendously helpful. I would check it in the mirror and imitate. I can't do exactly what he does because we have different hands of different sizes and construction, but something about this stuck with me.

O'BRIEN: A crucial 25 percent of it has to be similar. I think there are a million things you can do with your hands, and you can play a million different ways, but there are probably three things you're not

allowed to do because the human hand is just not built that way. If you get one or two or even three of those things to a certain degree overdriven, then things start to blow up.

MADIGAN: What has been found also, which is very reassuring, is that the greatest growth in the brain with regard to synapses after about 20 years old has to do with the hands.

O'BRIEN: That's interesting, I didn't know that. I'll have to see what Frank has to say about this. The amount of the brain given over to the operation of, say, the face and the hands, is enormous.

MADIGAN: Even at a rather late stage you can change your hands. I remember seeing this strange documentary about Segovia where they speak of his hands and large fingertips. However, when you look at photographs of Segovia's hands when he was young, they didn't look like that. He made them look like that to do what he wanted to do.

O'BRIEN: One of the things that I can definitely quote from Segovia [is] one of the few things I actually asked him once when I was with Alexander Bellow. I asked was there anything he had to change in his technique when he got older. He said he had to practice apoyando more and he has to loosen up more here every day. He always began with apoyando at the beginning of the day, not with tirando, and he felt that that helped him loosen up, and that that had to come over into his free strokes, his tirando. That was what he had to emphasize to keep his hand loose as he got older. Clearly, he was a person who could play into his nineties, playing concerts until the year he died. Everything else in his body failed before his hands. He sometimes got lost in pieces because he had learned them 70 years ago, and so his memory failed him at the end, but his hands would still function, and they would still make that extraordinary tone that he was always famous for.

An interesting thing about that is when you play with your fingernail, when you relax the tip of the finger as you play, you [the finger] depart from a broader and broader segment of the nail, and therefore make a mellower and mellower tone, as if you were plucking with the side of a plectrum. If you tighten up the tip of the finger, you [the finger] depart from a very tiny point of the nail and make a thin metallic tone. Part of Segovia's tone was clearly that relaxed tip. The weight of his hand was always balanced over the treble to the extent that when I saw him play from the front, I always remember the image of seeing

the back of his hand and the upper part of the fingers, and the rest of the fingers were in underneath it [the hand]. In other words, he wasn't out like this [with the right-hand fingers extended], he wasn't leaning off center. His fingers always seemed to be in, underneath his hand somewhere. That eventually made a lot of sense to me. He would find a good position and then he would play that way, and if he needed to play a different part of the instrument, he would move that whole unit somewhere else.

"Painless" Hand Problems of String Pluckers[1]

By Brian Hays

As a guitarist whose right hand went completely haywire, I applaud this journal's efforts to deal with music medicine. Mind you, this is coming from someone who had given up on the medical community. Most of the doctors I have seen (mostly orthopedic surgeons, hand specialists, and neurologists) assumed the attitude: "I know the physiology; there's nothing wrong with your hand; therefore, your dysfunction must be psychological." As I'm sure you can imagine, such irrational thoughts coming from "people who should know better" can disillusion and frustrate someone looking for help. Thus my elation at finding rational, responsible discussions of the strange kinds of things happening to malfunctioning hands like mine.

The kernel of my predicament—dysfunction in the absence of pain (now nearly fixed)—has yet to be addressed, so I am writing this to raise questions on the nature of coordination and to offer those with similar problems some ideas on retraining a "hand-gone-wild."

The Evolution of the Problem

Soon after finishing an MA in music at the University of California, San Diego (in 1983, with a thesis on classical guitar technique), I began inexplicably to miss notes with the right (plucking) hand, particularly the index finger. With increased technical practice over the next few months, things seemed vaguely tight and uncoordinated in a few very specific movements (such as alternating the index and middle fingers with free strokes), but my ability improved markedly in other movements (such as alternating the index and middle fingers with rest strokes).

My problem also puzzled many very good guitarists; my technique seemed "correct" by all accounts. Perhaps the worst part of all is that I never experienced any pain at all—I had no right to claim something like tendinitis or carpal tunnel syndrome, and thereby be absolved of insanity.

[1] This article originally appeared in *Medical Problems of Performing Artists* (Volume 2, Number 1, March 1987, pp. 39-40). Reprinted with permission.

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I survived for two years in this condition by re-fingering passages to avoid the problem movements, but by the summer of 1985 the vague malfunctions infiltrated other movements, so I resolved to make it or break it. Four to six hours a day of almost nonstop repetition of a few movements took about a month to "break it" completely. Still no pain, but now I at least had well-defined dysfunctions.

Specific Dysfunctions

1) Any attempt to flex the index or middle finger at the MP joint caused the ring finger to flex first, and with more intensity than the finger I wanted to move. I could not flex the index or middle finger and extend the ring finger at the same time. Without flexing the index, however, the ring finger extensors had full strength. (I have since heard this condition referred to as "trigger finger" by guitarists, although this seems to conflict with the definition of that term given by Fry in Vol. 1, No. 1 of this journal.) I now know that this aberration in motor control is relatively common in musicians who pluck strings.
2) The ring finger would not flex without abducting. I could not hold the ring finger against the middle finger and flex at the MP joint at the same time.
3) Flexing any finger caused uncontrollable abduction in other fingers.
4) The tip joints of all four fingers seemed excessively tight, indicating an overactive flexor digitorum profundis. (Another clue pointing to this muscle is that holding the DIP joint of the little finger at full extension provided almost normal use of the other fingers.) Yet an electromyogram was normal.

The Search for a Solution

I stopped playing. Had to. The first issue of *MPPA* addressed the stress of performance; how about the stress of watching seven years of a university education become worthless? Six months later I found help in the New York studio of Pat O'Brien, lutenist, theorbist, guitarist, and probably the only person in the world's guitar community with a reputation for dealing with haywire hands. From him I learned words such as "abduction" and "digitorum," as well as techniques for retraining a hand to move in a way that avoids "that which causes problems." Here is a condensed version of Mr. O'Brien's conclusions as I under-

stand them, arrived at by his own experience with haywire hands and tendinitis some 16 years ago and refined since by his helping many ailing guitarists, lutenists, harpists, and other musicians:

> 1) Excessive tension (for himself, he defines this as *any* tension) across the distal interphalangeal joint of any finger is problematic. The flexor digitorum profundis, which controls this joint, allows for limited independence between fingers because of the mechanics of this musculo/skeletal/tendonal structure. The limitations are variable in degree according to the individual's anatomy.
> 2) Abduction is problematic, probably because any weight put on a finger that is "leaning over" must be borne to a greater degree by the intrinsic muscles and to a lesser degree by the larger and more mechanically advantaged muscles. The implication is that the lumbricals and flexor digitorum superficialis, in that order, should assume as much responsibility as possible for any flexion.
> 3) Tension in the "opposers" that pull the thumb and little finger together curls the line of MP joints, pulling the base of the little finger in and causing the fingertips to converge, probably also leading to abduction.

Of course this list represents what I picked up from Mr. O'Brien pertaining to my problem, and in no way can I speak for him directly. But on the basis of four days' lessons in January 1986 (and numerous telephone calls since), I have seen definite, though usually minute, progress every two weeks without fail or relapse. As of January 1987, my hand is not yet 100% normal, but the index finger now functions independently from the ring finger (this is what I worked on the most) and most of the unbidden abduction is gone. Flexing the middle finger still flexes the ring finger a bit, although I anticipate this will resolve in a few weeks. Since the movements that I worked on improved while ones I ignored stayed the same (until I focused on them), there is no doubt that the following procedures have resulted in specific alleviation of specific symptoms:

Corrective Measures

> 1) Disconnecting the ring finger from the index finger was achieved by lightly pressing outward with the ring finger against my left

hand, then plucking a string with the index finger. This exercise employs the concept of "reciprocal denervation," wherein the contraction of extensors tends to relax the corresponding flexors.
2) Abduction can be countered by conscious adduction: holding the fingers together while they flex and extend, and moving them as slowly as required to control the abduction.
3) Turning off the opposers necessitates careful monitoring of the thumb's movements, which can balance against the muscles pulling on the little-finger side of the hand.
4) Generally, practicing a simple, broad sweep of each finger (moving first and primarily at the MP joint and then at the PIP joint—but never at the DIP) and using this as a model for all right-hand movements helps to loosen up the hand.

A Call for Answers

Now, finally, to the critical issue that I would like to see addressed by an informed medical source. I never "presented with" anything that implied significant trauma to the tissues of the right hand or its supporting nervous system. It seems that my neurologic connections got re-routed to include unwanted signals, e. g., apparently the lumbrical for the ring finger fired when I wanted only to fire the lumbrical for the index. Can this sequence of crossed neurologic signals that are then retrained be explained physiologically and neurologically? The neurologist I consulted acted like this was science fiction. How can overuse (even in unbalanced or abducted positions) cause the brain to send stray signals to the wrong finger? There must be a definite answer because the dysfunction is reproducible—Pat O'Brien has seen many people whose ring fingers move when the index should. Does this syndrome have a more specific name than "overuse injury"? How close is this to the pianist's drooping of the fourth and fifth fingers, as my "fifth" isn't involved? To put it generally, does any of this discussion fit into the paradigm of medical understanding?

A Candle in the Dark

By Brian Hays

Horror stories often open with an idyllic setting of simple happiness and joyful expectations for a shining future. And so it was in 1983 in San Diego. As an aspiring musician I was doing as well as anyone could dream: I had teaching positions at both a community college and the UCSD Extension program, plus Adult Ed evening classes, with over 20 private students, restaurant and wedding gigs, and a growing number of concerts as a soloist, duo guitar act, and in a guitar quartet. Though I was only a steel-string finger picker through high school, in six-plus years of college I had a wide range of musical experience. I played a lot of early music: my first classical teacher was Robert Barto—for a few months before he left for Germany—whose senior recital of Dowland and baroque lute music had a big impact on me. My years of study with Celin and Pepe Romero covered the full range of traditional guitar repertoire, juxtaposed to the core focus of the UCSD music department on the avant-garde. This had me not only playing modern guitar pieces, but also doing a wide range of ensemble work.

I had finished my master's degree in classical guitar performance with a thesis on guitar technique, had a well-received recital, and everything was moving forward wonderfully for most of a year.

Then the Weirdness started.

Initial Symptoms

Note: In right-hand fingerings, *p i m a* are the thumb, index, middle, and ring fingers, and *q* is the little finger.

The first thing I noticed was that the index finger was missing in *pimi* arpeggios with free strokes. Even though everything seemed fine at super-slow tempos, I hit a threshold where something would go wrong (usually the feeling that *i* was coming up short, but also that of *i*/*m* playing bumper cars). Despite being very careful to avoid tension, keep the hand relaxed, and stay within healthy guidelines of practice, nothing improved—and eventually symptoms spread to other movements.

JLSA XLIX–L (2016–2017)
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Spasms in strange parts of the hand became common, to the point of perpetual twitching. Rest stroke scales were OK for quite a while, but after several months that got weird too. Then the worst symptom, at least in outward visibility, emerged: my ring finger would curl into the palm of my hand any time I even thought about moving my index finger. It was a strange sensation. It was not a hard pull, just a soft but irresistible movement as if pulled by magnets. My extensors were paralyzed, and there was nothing I could do to push the finger back out, with or without tension.

This affected typing as well. Hitting any letters with my index finger invariably produced stray L's from the overactive ring finger.

My hand also developed tremors and twitches as a constant reminder of the condition. Perhaps the worst part is that I never experienced any pain at all. I had no right to claim something like tendinitis or carpal tunnel syndrome and thereby be absolved of insanity. If something had hurt, it might have been easier to know what to avoid. Strangely, the absence of pain makes it harder to find a way out.

After two years of a roller coaster that ultimately was only spiraling down, I had to quit. I bought a computer and dove into software development.

The Dark Ages

This was a full decade before the Internet. There was no help available anywhere. Vague rumors of players with blown hands circulated, but very few professional musicians dared let anyone know they had a problem. You could find Leon Fleisher's story, but he had neither resolution nor even an accurate diagnosis at that time. Doctors simply didn't know anything. One literal quote from a hand specialist: "If you were a bricklayer, you wouldn't even know you had a problem." Unable to find anyone who could relate to the problem, I at least tried to own it, and in a cynical moment started referring to it as "Hays-wire Hand." But finally, six months later, a friend of a friend passed along the phone number of a guy in New York who helped people with hand problems.

Pat O'Brien was the rare musician who freely discussed his own issue (different from mine), how he overcame it, and how he learned things that helped many other musicians. My first phone call was lifesaving. Pat was generous with his time and described the range of issues guitar players in particular deal with, and the unfortunately large number of people affected by these things. I bought a plane ticket, arrived in Manhattan late at night, and trekked the dark streets with my guitar and suitcase to his studio where he'd left a key for me. As if I needed an

ominous beginning, when I opened the door for him that next morning, the first thing he said was, "Did you hear the shuttle exploded?" I thought he was talking about a local bus or such, but this was January 28, 1986, and the Challenger space shuttle had been lost.

The First Lessons with Patrick

Pat generously let me spend the next four days on the couch in his studio while giving me as much of his teaching time as possible. He started with an anatomy lesson, using a (hopefully nontoxic) Sharpie to draw the muscles on my forearm and hand. Then came the terminology for the joints, including the MCP (metacarpophalangeal), PIP (proximal interphalangeal), and DIP (distal interphalangeal).

The anatomy lesson had a few surprises. Most people wouldn't guess that the muscles that pull the outermost parts of the fingers are in the forearm. Nearest the skin on the palmar side lies the flexor digitorum superficialis (or sublimis, the FDS). It splits into four pieces of muscle that become tendons that run through the wrist out to the middle bone of each finger. It therefore flexes the middle (PIP) joint.

Below that, deeper in the arm, lies the flexor digitorum profundus (FDP), which has a similar structure with tendons running out to the tip bone of each finger, therefore flexing the tip joints. You might ask: How does the tendon that's underneath get past the upper one that attaches to the middle bone? With one of the simple marvels of nature, the FDS tendon splits into a fork and attaches to each side of the bone, and the FDP tendon flows through that fork out to the end.

The hand still has plenty of muscles too. The interosseous (between the bones) muscles pull sideways to spread fingers or bring them together. And of special note are the lumbrical muscles, which go from the palm to the first bone of each finger. They are the primary flexor of the big knuckle (MCP) joint.

It's important to realize that some oversimplification is necessary to start understanding anatomy, because there are always complications. In particular, though the FDP is the primary flexor of the tip joint and the smaller (but better leveraged) lumbrical pulls the bigger MCP knuckle, the starting point of the lumbrical is not anchored on a bone like most muscles. It starts from the tendon of the FDP. So the mechanics of how we flex the MCP joint are a miracle of coordination between the two muscles.

Though Pat covered the extensor and various thumb muscles, they weren't a primary point of discussion at this stage.

Three Common Problems

Next, Pat described the three common problems he'd seen over the years: hooking the tip joints; tension in the palm of the hand; and spreading the fingers.

1) Hooking the tip joints

The flexor digitorum profundus pulls on the tip joints, and tends to be part of various hand problems. It starts with a single muscle mass near the elbow that then splits into four separate pieces. Therefore, if that first part of the muscle contracts, it pulls on all fingers. This limits the independence and separation of movements that you want as a musician. And this is the kind of anatomical structure that can vary in different people.

In particular, as a player it's critical to notice if moving one finger in *any* way causes a second finger's tip to flex. That unwanted flexion of another finger would be a problem during fast alternations, and it's important to find a way to stop that. Once there's a problem, the easiest way to avoid it is to not flex the active finger's tip in the first place. Letting the tip joint relax as the finger presses against a string is the opposite of the aforementioned flexing—and a common topic in guitar technique. Holding the tip firm, or in the worst case flexing it, yields different sounds that might be desirable. Though some people can do that with no ill effects, Pat stressed that if you have a problem, you should adopt the relaxed-tip technique for all strokes. This also leads to the conclusion to avoid flexing the tips at all, in everything from holding a toothbrush to picking up a coin, signing your name, and even scratching an itch.

In my case, it was a complete surprise when Pat showed me how I was hooking the tips. My technical training was already in the "relax the tips like the bristles of a paintbrush" camp. I'm pretty sure this was a secondary "compensatory" condition that came along after I'd been wrestling with the main problem for a long time. Since this was a clear, specific problem, I worked hard on it in the following weeks and months. My own oversimplification was to half-jokingly label my FDP "El Diablo en Forearm," which I confessed to Pat a year later. He laughed but chastised me that demonizing my body parts is probably not the best therapeutic approach.

My distal joints were never flexed all the time, though I have seen people with that severe of a problem. For me it was rather subtle,

yet significant. I *knew* I didn't want that happening, and in slow practice I could always touch a string and allow the tip to relax backward, but at faster alternations the unwanted flexing would creep in.

2) Tension in the palm of the hand

The "opposer" muscles that pull the base of the thumb and base of the little finger together (forming a "cup" in the palm) can be hyperactive, causing the hand to be in constant tension and affecting the paths of the fingers. Some other pedagogues suggest that a slightly cupped hand is a natural position to maintain for stability, but Pat pointed out that uncontrolled tension that you cannot release is a big problem. Again, the main course of action is to avoid that posture altogether. This isn't easy to change, as there are no muscles that really do the inverse of these muscles. You need to learn to just relax them.

3) Spreading the fingers

Abductor muscles pull fingers sideways, away from the center point of the hand.

Adductor muscles pull them back in toward the middle.

These small muscles inside the hand are not designed to bear weight. They should be used to keep the fingers in the desired alignment so the bigger muscles can pull directly.

Pat liked to use architectural metaphors to emphasize how the hand and fingers should be used. The adductors are the cross-bracing that keep the weight-bearing fingers in place. In general, spreading out (*ab*ducting) creates an unstable situation where the abductors themselves are applying pressure on the strings, and any increase in pressure from the larger muscles puts torque on an essentially twisted finger. This is more noticeable in the left-hand fingers squeezing against the neck of the guitar, but is still critical for the right-hand technique.

Pat also described a vicious circle that could lead players down the dangerous road of spreading the fingers. Once the fingertips are curved back toward the hand, they are like the meridians of a globe, running north–south. If you now abduct them, they only spread out at the middle (PIP) joints. The tips of the fingers remain together, like the meridians that were widely apart at the equator converging as they approach the South Pole. If your fingers are banging into each other instead of gliding past each other, you might react by spreading them, which ultimately makes it worse.

So, in general, abduction causes problems, including the weakening or actual atrophy of the adductor muscles over time. Learning to relax the abductors becomes critical. For me, strengthening the adductors that pull sideways back toward the center of the hand was helpful, but above all was the need to stay with movements that were as relaxed as possible. The goal is to have *no* extraneous tension in the muscles, so any countering exercises needed to be done very carefully. They are not to be part of normal play.

My Condition Went beyond the Most Common Three Issues

Pat pointed out that the lumbrical muscles were overactive and not working independently. Though this literally tied into the FDP issues, there were two symptoms specific to misbehaving lumbricals.

1) Flexing the index at the MCP joint caused the ring finger to do the same, in a manner stronger than what the FDP issue would do. And the other finger combinations were also entangled. I couldn't flex any MCP joint without some other finger wanting to join in.
2) In some motions, a finger (usually the middle) would on its own extend in a very uncomfortable way. Though flexed at the MCP, it would feel "scooped," with the last two joints hyperextended. I started calling this my "swimmer" position because the shape of the finger was reminiscent of the arched back of a swimmer coming up for air, or the lifted head and arch at the start of a swan dive. This is about as far as you can get from what a guitar-playing finger should be doing.

I mentioned above the unusual aspect of the lumbrical starting from a tendon instead of a bone. It does the same kind of thing on the other end. Instead of just reaching across the MCP joint and attaching to the palmar side of the bone, it worms its way around to the back of the finger and attaches to the extensor tendons! So even though it flexes the MCP joint, the harder it pulls, the more it *extends* the PIP joint.

Pat stressed the general thought that I needed to learn to feel the tension in those muscles—not just the effects of what they moved—and had to relax the palm and not let tension build up.

Guidelines for Recovery

In general, Pat's instructions were as follows:

As in any other athletic activity, stretching is important. All the muscles in the forearm should get stretched regularly. For the thumb and individual fingers, be gentle.

The goal is to make relaxed, loose movements, but it's important to define that. Desired movements need to be strong—there's nothing limp about them. But if a motion comes up against resistance from an overly tight hand, or if unrelated muscles tighten unnecessarily anywhere in the body, you need to slow down and address that. There's a trick to it though, because some things do move together. Part of Pat's artistry was in helping me learn which things are OK and which can be problematic.

Stay conscious—don't repeat things longer than you can keep monitoring them. And be aware that *something in your hand that feels right, is probably wrong*. To change habits, you have to be open to letting go of things.

Never do any repeated movement with one finger without also doing the same to all the others. Players that have a problem are often desperate to fix things, and "bearing down on a finger to make it behave" is not the right state of mind and can lead to additional problems. One way to protect against that is to do the same number of repetitions with each finger, *including the little finger*. (Another reason to use the little finger is to draw blood into that side of the hand.)

Most exercises he showed me had similar self-limiting strategies built in to avoid overworking anything.

Specific exercises are described below on page 98.

After New York

It was a jam-packed week with a lot to digest. Pat told me it would take time to let things change, and to not be in a hurry. After several days I could feel some things changing for the better, giving me confidence to stick with it. Pat was very generous over the next year, taking periodic phone calls to answer questions. After a few months, the hooking of tip joints was greatly reduced, which helped slow rest strokes come back into play (Pat later said he'd heard this many times—rest strokes are safer and the last to go, and true to his prediction they were the first technique to recover). More important, the curling of the ring finger was noticeably better, and a few months later I felt like this was fully resolved.

With that symptom cured, I thought I was at least 90 percent on my way to playing freely again.

Meanwhile I'd been reading as much of the medical literature as I could access (which required trips to the university library in those days), and I got a subscription to a new journal called *Medical Problems of Performing Artists*. This was a wonderful addition to the music (and dance and other arts) medicine community, but issue after issue had articles about painful injuries like tendinitis. There were no references to painless loss of neurological control of the hand. So I submitted a missive outlining my condition, and how Pat was able to confirm that many others had similar issues—and how he was able to help them recover from the problem. The main purpose was to ask why no one was talking about this, what it might be called ("overuse syndrome" wasn't very precise), and how can overuse cause the brain to send stray signals to the wrong finger.

They published it in the spring of 1987, and it is reprinted in this issue of the *JLSA* on pages 81-84.

After the Article

I soon received a steady stream of letters from musicians with similar problems, with whom I shared what I knew—the most important being Pat's phone number. I also received a handful of letters from doctors who thanked me for pushing this into the open. Most important perhaps was a phone call from Dr. Frank Wilson, a neurologist and one of the most prominent music-medicine doctors of the age (he actually ran a music-medicine clinic when few of these existed).

Finally, a Name

Frank told me the condition was called focal dystonia. It was a known, documented neurological condition where the brain has lost its control of fine motor skills—and it doesn't only happen to musicians. No one knew exactly why or how it occurs, but somehow the feedback loops between sensory input, proprioception, motor control, and the learning process get confused, the map of the body gets metaphorically and literally blurred, and repetitions don't retrain movements the way they used to. He was very excited to hear of Pat and that he had found ways to reverse the effects, and the two of them collaborated over the next many years. Frank had a section about Pat in his widely published book *The Hand*. Making that connection was probably the most significant result from that article.

It's important to recognize that, until this time, only a handful of musicians had ever heard the term focal dystonia, and in fact few *doctors* knew of it. The haywire neurological aspects were not something that had any direct treatment. Pat's experience helping many different musicians, including violinists and other non-guitarists, led to a therapeutic arsenal dealing with a wide range of issues where only a percentage involved dystonia. Around 1990 he described my hand as being one of the most tangled he'd seen. When I asked what the success rate was for full recovery of such severe problems, he said it was difficult to come up with a number because so many people came to him temporarily and from long distances, and he couldn't know how many followed through. For those who were in New York or were able to work regularly for several months, the number was higher, but in general he guessed around 25 percent. At that time I knew several guitarists who had returned to performing with Pat's help, and in a world that had a 0 percent success rate anywhere else, I liked my chances.

Unfortunately, it took a while. My recovery had leveled off and I couldn't quite get back to where I could play for real. My energies had turned to raising a family and building my software company, though I periodically got back to the guitar and tried new things. I returned to visit Pat in the early 1990s for another lesson. He greeted me with a clap on the back and joked, "Ah, the man who started all the trouble!" Apparently the article had stirred up far more rehab work than I had realized.

We looked at the evolution of my symptoms. It's not unusual for dystonia to have different malfunctions ebb and flow. Though some strategies worked a bit, things didn't change overall until 2000. I hadn't seen Pat for a couple years, but was able to go back to New York for a couple days, and then again in 2001. I came away from those sessions with some new ideas, including going back to Villa-Lobos's étude #1, but with different fingerings, and doing ultra-slow, super-simple movements away from the guitar.

A Portrait of Patrick

Those visits also inspired me to reflect on the man himself. Pat O'Brien was a very impressive individual. Literally, his individuality was impressive. He didn't try to be like anyone else, and I've never met anyone quite like him. I often described him as a walking library because his depth of knowledge showed up in any discussion. All he had to do was look up a little while thinking, and it was as if he were vividly seeing whatever he was dredging up. And yet he didn't recite dry facts;

everything was filed away with a purpose and came out with thoughtful interconnections. So I always qualified that reference right away because people expected it to mean he was tied to historical conclusions. Instead, Pat was as far away from being dogmatic as anyone I've known. Yes, he had come to conclusions about the healthiest approach to movements. But he remained perpetually curious and would entertain any question and explore its nuances.

To illustrate: A while before that 2001 visit, I watched my son reach for a guitar that was lying on the couch and pluck a string. Because of the angles, his fingertip went under the string and pulled it up away from the guitar, then released it with a loud splat. He played it "reversed" from usual technical instructions, by extending at the MCP big knuckle and hooking the PIP and DIP. But rather than jump on what was "wrong" with that technique, I tried it myself and found that my right index finger was completely incapable of making that movement. Good, bad, or ugly, that card just wasn't in my deck anymore, and that didn't seem right. My thought was: a healthy hand should be able to do *any* natural movement. How often or with how much strength is a different story, but not being able to do it at all indicates a malfunction that's probably worth correcting.

So I started checking out variations of the angles and the sensations and the pressures to determine where the edges of this particular paralysis resided. Since the movement had a natural tendency to hook the tip joint, I was extremely careful to mitigate that and invented a movement similar to pressing down a key in an old typewriter with a very deep throw. But the focus was on the lifting of the finger.

The starting position was an almost straight finger flexed as much as possible at the MCP (with the finger perpendicular to the palm). A neurologist later described that position as the "fullest expression of the lumbrical muscle." The movement then simply reversed those two joints, lifting the finger where the DIP stayed straight, the PIP flexed from 170 degrees to 90, and the MCP extended from almost 90 to a flat 180. This is of course the antithesis of the lumbrical's activity, and ended up giving me a tool to turn it off. I then simply moved back and forth, where the PIP flexed in exact opposite of how and when the MCP extended. To emphasize not hooking, I started by pushing my finger more than an inch *past* the first string, down into the sound hole until the string was near the fold of the PIP. Then I drew the finger back up, sliding against the string across the DIP joint like a violin bow sawing away at the string. If the tip hooked at all, it would hang up badly on the string, which helped as a test to ensure the FDP was not engaged.

I also came up with this partly in response to research on FD about the role played by the sensory system. Some studies had shown that dystonic hands have lost accuracy in the sense of feel. This can be improved by feeling the dots on dominoes or practicing Braille to relearn better sensation and sensory discrimination (and of course it goes beyond that—and some players have improved hand function using that and related techniques). So this was my small nod toward rubbing the whole finger and feeling the connection between the movement of pushing it out and the sensation of where the string was rubbing. I would also rotate the hand around so the string touched the sides of the finger, or go between the first two strings so it was getting rubbed on both sides.

When I showed this to Pat (with great trepidation), he was very curious. As to the first part of plucking in that direction (extending at MCP), he said there was a similar technique for baroque lute when the thumb needed to stretch to the lowest bass strings while the fingers still had to play the trebles. At least the MCP was straight and the PIP had to do the plucking. He agreed with the idea that it would be good to regain the ability to do those motions, as long as I kept it in the realm of a simple motion and not as the basis of a new technique.

Improvement Milestone: The Early 2000s

I worked on that and the other ideas slowly and in very short (about five minute) sessions for the next two years. By then I was successful in removing all symptoms from my keyboard typing, and by 2003 had a breakthrough on the guitar where my thumb and middle finger could alternate even at quick tempos with complete freedom and no Weirdness. During the prior years, people used to ask, "Why don't you play anyway?" since I could "fake" a piece by only playing with the thumb and doing some bizarre fingerings to get the notes out. But for me, the feel of the fingers dancing on the strings was a major part of the joy of playing. The art of the movement was as important as the art of sound because they are intertwined, interdependent, mutually feeding each other. What my well-meaning friends couldn't relate to is that my hand was having spasms and cramps and doing weird things that I would have to fight the whole time. It felt horrible, it didn't leave much headroom for being musical, and doing so only made my symptoms worse in the long run. But now I had something that, though limited, worked without all those distractions.

For the first time since 1983, I could practice a full piece and it would actually get better.

The Villa-Lobos étude is a lot of fun with just the thumb and middle finger! And now I could play Miguel Llobet's "Canço del Lladre" for my wife again.

Final Meeting with Patrick

I returned to see Pat in 2006. Though not perfect, my hand continued to improve. At that session he broke out some easy Fernando Sor duets to demonstrate a point. I gave it a good shot but stumbled pretty badly. We both laughed when I confessed I had not actually looked at written music in 20 years. The bike riding came back quickly though, and we continued with an important lesson.

The early facsimile editions of the 19th-century guitar composers show fingerings that are quite different from modern editions (and one of Pat's amazing skills was to name several different editions and describe the merits or deficiencies of each). These days people tend to expect more mechanical control with technique, implying that if there's a relatively weak finger, you should train it to be as strong as the naturally strong fingers. But 150 years ago they were more respectful of the anatomy, and put the heavier middle finger on the beat (or on the most important melodic note) where a modern edition would think the index or ring finger is fine. They also brought the thumb up to the third string more often, especially to have more weight on an important note. Pat showed me many examples of using the thumb or middle finger on notes that make complete musical sense, but are surprising relative to modern arrangements. Another example was a simple waltz by Aguado with pickups to the downbeat. The pickups would always be played with the index. Pat emphasized that the old fingerings are much healthier, and since having all the notes the same is not very musical in the first place, it's better to exploit the differences between the fingers instead of neutralizing and overcompensating.

Around 2006 I also revisited neurologists to see if modern medicine had progressed. They had a new focal dystonia-oriented electromyogram (EMG) that could isolate the lumbrical problems, and I even got insurance approval for the kind of Botox treatment that had brought Leon Fleisher back to performing. Botox treatments can temporarily reduce the symptoms of FD, but its effects fade away in a few months. It only masks things and does not change the neurological malfunctions. Noting my level of neural-plasticity and partial success at retraining, my doctor mentioned a slight risk that the Botox treatment might adversely affect that training. It would likely give me temporary improvements in

playing, but wouldn't help after its effects wore off, and might even make things worse. Since I was more interested in helping to find a true cure to FD, I opted against the treatment.

Over the next five years I slowly improved, and could play more and more pieces, though not completely free of symptoms. The lumbrical entanglements were reduced but persisted in some movements, and I still had some tremors and random minor spasms. But I was happily playing music.

Lessons with David Leisner

In 2011 I met with David Leisner, a great guitarist who had come up with his own approach to dealing with his dystonia, leading to his full recovery. I had four two-hour lessons with him over two weeks, and after several months had nearly eliminated the remaining Weirdness. It would be impossible to cover here exactly how his method worked on my last layer. David has a very specific sequence of training that starts with large movements (completely avoiding individual finger plucking) and progresses slowly to more complex, fine motor skills. Though I'd seen his videos on YouTube that try to describe the process, it wasn't until these lessons that I fully understood how to make it work.

Over the next couple of years I was able to play most of the repertoire. I was still working more than full-time running a software company and had no intention to play professionally as I didn't have the time to gain the final polish and high level of play reflected in my master's recital. But that's OK.

Last Contact

It turned out that 2006 was my last visit to see Pat in New York. We did exchange occasional emails through 2011. I tried to seduce him to come to southern California, but his personal life was keeping him busy and he mentioned he wasn't doing much rehab work during that period. Since I was doing well, there was no need to squeeze in a trip to New York.

I did make sure in that email, 25 years after we'd met, to send him an important message, not realizing it would be my last:

> *Dear Pat:*
>
> *Meanwhile, just in case it wasn't clear and you hadn't heard it in a while, and perhaps if others never heard why you do the rehab work:*

In 1986 you saved my sanity, and in many ways my life.

No one else in the world, and I checked under a lot of rocks, had any clue how to pull my train wreck out of the river. You gave me an understanding and a foothold that brought sense and direction to a spiraling nightmare.

I've thoroughly enjoyed all our meetings through the years, and have used your teachings in areas beyond music and finger-wiggling. And especially now that I'm playing music again, and I continue to re-work and re-apply your wisdom and perceptions,

I am daily, and will be eternally, grateful.

Brian Hays

Specific Exercises

Caveat: Some of Pat's guidance was in symbolic or metaphorical terms because that's often the best way for humans to understand a point. I'm going to get into very specific statements below, but remember that these are distilled from many conversations, and any one individual may need a different presentation to really understand what's important. In many cases this much detail might need to be avoided altogether if someone is getting overwhelmed. It's quite possible that any one of these actions could be overdone to the point of creating new problems, so you have to keep monitoring things and not push hard. I think this is a big part of why Pat never wrote down a method. Being able to listen to students (both in actual words and in seeing physical reactions) is critical to know when to switch gears or directions. To keep descriptions short, I'll refer to the problem hand as "right" and the opposite hand as "left."

Brushing

The core exercise leading to relaxed play is basic strumming with an individual finger while the other fingers hang loose. The goal is a wide arcing movement that happens to hit the strings—not some precise plucking of sequential notes. If the sequence below is stressful at all, just stick with slow quarter notes for a number of days before adding on the faster notes.

Starting with the index, brush up, dragging it from treble toward bass with a relaxed tip, and then brush back down with the back of the nail. Done with little arm movement, the arc of the finger probably hits just four strings, but don't be exact. Note: In that first upstroke, be *very* careful about finishing that last string—try not to hook the tip immediately afterward. There can be a tendency to flex the DIP after releasing the string. Notice the up stroke is on the beat, unlike usual "folksy" strumming.

Start quite slow, with each stroke as a quarter note at 50 or slower. A metronome helps to keep things steady, but don't use it to chase a faster tempo.

Strum up and back twice, for a total of four beats.

Now play twice as fast, as eighth notes; up and back for four beats.

Now play twice as fast, as sixteenth notes; up and back for four beats.

Repeat with the middle finger starting with four slow quarter notes, then the ring finger, then the little finger. Once things improve and all this feels smooth and easy, then repeat the whole thing at 60, and perhaps again at faster speeds—as long as the swinging finger is loose and comfortable.

After playing faster, it's a good idea to slow it back down and finish at a slow pace.

Don't do it for more than six minutes at a time, but repeat as many times a day as you can.

Eventually, but only when it feels perfect, it's important to speed this up and really exercise each finger with a quick, loose, sweeping motion that's independent from extraneous muscle tension or other movements. Note, however, that because of the wide sweep, adjacent fingers might move some in a natural way. Knowing the difference between this and unwanted flexing of muscles may not be easy at first, which is another reason to keep it slow.

Always remember to continue playing it slowly more than you play it rapidly.

Pat once observed that rest strokes and free strokes are just the two parts of this same brushing arc. Where the finger comes through the second string to land on the third string is the rest stroke, and where it comes up after the last (probably fourth) string is the best free stroke. This emphasizes the desire for the fingertip to be well under the hand for free strokes.

Addressing the Three Common Problems

Tip Joints

The brushing exercise described above addresses this issue. You cannot brush across the strings cleanly if the tips are hooking. If they

are, you must slow down and do it more gently to find a way to do the motion with no hooking. Perhaps shorten the stroke and only touch two or three strings, then relax and let the finger fall back.

There are also things you can do off the instrument. As alluded to above, notice if your signature or handwriting is affected. For me it was subtle, but the top curve of my capital B had a kink in it. Try to slow down and smooth those things out, and hold the pen with nonhooked tips. Become aware of any other habitual movements that have tight tips.

Dragging Relaxed Tips

The most productive specific exercise for me is hard to describe in just text. There are three phases to it: 1) dragging fingers with relaxed tips across a flat surface; 2) doing each finger one at a time; 3) moving it all to using the back of the left hand as the surface.

1) Arrange a table height where it's comfortable to put the belly of your forearm resting on it from elbow to wrist to fingertips, initially with the palm and extended fingers flat on the surface. You can use the back of a guitar, but under stress you might dig your fingernails into it, so a harder surface is safer to start. Keeping the wrist down, slowly drag all four fingers (kept lightly together, not spread out) toward the wrist as the hand lifts at the big knuckles; the forearm remains flat throughout. Make sure all tip joints relax backward, and slide until the middle joints reach their peak—do not go past the point where all the tips can remain relaxed back. The ending position has the hand arched in the air, still touching at the wrist, and the fingertips are all touching the surface, with MCP joints only slightly flexed, and PIPs approaching 90 degrees, depending on your anatomy and your condition. The fingernails have probably touched now (depending on their length) and the fingers are close to perpendicular to the table from tip to middle joint.

Depending on the level of hyperactivity of the FDP, you may not be able to make this movement without some fingers flexing at the tip joint (sometimes the little finger is the worst). If so, extend back out, and only come as far as you can while not flexing any tip, and go back and forth gently just in that range.

Now, the real trick is to lift the fingers straight up just a tiny bit, straightening only the MCP joints, and see if you can hold the posture without the tips hooking. That's the goal. Someone with a real problem with FDP probably can't come close to this at first. For me, the little finger in particular would hook instantly as soon as the pressure was released. In some cases, you might not be able to drag the fingers back at all without

hooking. If so, stay at that spot where the tips have hooked, try to relax all of the rest of your arm and body, and with your opposite hand's index, lightly touch the back of the hooked tip joint to push it into an extended position. Play with that for a while, and soon you can go back to dragging and will get a little farther. Do not expect this to be fixed in a day, but you can expect to feel some level of progress in a day or two.

2) If you can attain the final position with all fingertips relaxed back with minimum pressure to hold them in place, the next stage is to keep three fingers there, then extend just one finger at a time all the way out (keeping the others undisturbed—start with *i*), and drag that finger toward the wrist to rejoin the bunch in the final position. Now, as before, watch the next part carefully: as you lift *i* again to reach back out and repeat, try to not let it flex the tip *at all*, and watch the other fingers to see if they try to flex in reaction to the lifting motion.

If so, now you have something to play with away from the guitar that can retrain that muscle. The goal is to be able to have each finger lift, reach, and drag back, with no tip joint flexing anywhere. But you may not get there for a long time; at this point it's an individual thing to assess what's really happening. That's what Pat was so good at: observing things that I wasn't necessarily aware of, but also knowing when to warn me if I veered off into dangerous territory. This is why it's hard to expect this textual description to work straight out of the box. You have to be able to take the idea of isolating this movement, play with it, observe as dispassionately and open-mindedly as possible, and know when to stop or change what you're doing because something's getting dangerous. This is extremely hard to do on your own when under the stress of having your hand going crazy.

3) Use the back of your opposite hand instead of a guitar back or table.

Pat showed this to me at the very end of that first week. I told him, "I'm going to be on an airplane for five hours. What can I do while sitting there to jump-start the work I need to do—but not overdo it?" So this is a more compact form, and the limits are to use all fingers the same amount of time, and after about six minutes stop and do something else. The starting position is like punching the bottom of your open right hand with your left fist. With this variant, your right wrist might be slightly flexed or straight, since the whole arm is no longer in line with a table.

a) Make a fist with the left hand and hold it in front of you.

b) Put the middle of the palm of the right hand against the big

knuckles of the left, with the bottom half of the right palm flush against the left-hand fingers. The heel of the right will probably be near the middle joints of the left-hand fingers. You have to play with the height of the hand to find the right amount of room for the fingertips to work.

c) Bend the straight right-hand fingers at the MCP joint so the full length of the fingers lies on the back of the left hand. Note that you might be more comfortable if the base of the fingers is actually a little bit above the "table" of the left hand.

d) Drag the fingers back toward the right palm as before.

Repeat the whole process with individual fingers.

Be gentle! It's actually a benefit to have your fingernails coming onto your other hand because you can feel if you're applying too much pressure. Make it as light as possible and take care not to scratch yourself.

Tension in the Palm of the Hand

Unwanted tension in the little finger side of the palm seems to be in reaction to the thumb—literally, these muscles oppose each other and are inspired to fire at the same time. So getting the little finger side to relax requires careful monitoring of the thumb movements, and to practice them slowly while making sure the little finger side doesn't engage.

Exercising the little finger (*q*) also helps to turn off *p*/*q* opposers:

1) On a single string, slowly alternate each finger with *q* in free strokes, such as

i q i q i q i q m q m q m q m q a q a q a q a q

2) Play two-note chords with each finger in "opposition" to *p*, being sure *p* uses "non-opposers" by pulling sideways toward the web.

p/*i p*/*m p*/*a p*/*q*

Supporting Adduction and Reducing Abduction

In a hand that has the abductors working overtime, the adductors can atrophy and become weak, or may just avoid firing because they're out of practice. It's important for all these muscles to work together in balance, and the primary goal is to ensure healthy muscle tone. Keep in mind the "meridians of a globe" metaphor: spreading can cause the tips to converge. The job of this exercise is for the PIP joints to be more together, and this will let the tips glide past each other more easily. But also realize that fingers are irregular. For example, many people's indexes

have a significant twist to them so the plane of the nail is not parallel to the plane of the middle joint. So, we can't expect them to be molded into perfectly straight lines, etc.

Pat invented this somewhat crazy exercise that purposely gets all the fingers bunched up together and limits mobility. If your abductors are overactive, the movements are hard to do without a lot of wiggling. Otherwise it's very simple.

The adduction exercise with all fingers on one string:

a) Place all four fingers on the 2nd string, in free stroke position.
b) Put the thumb on the 1st string—yes, past the other fingers. This forces the fingertips to be under the palm near the end of their "throw." Leave the thumb as relaxed as possible throughout.
c) Squeeze the fingers together at the PIP joints, and then relax. Keep the fingers in place, though the tips may slide a little along the string as you compress and relax. Feel what happens at the tips when you squeeze—they should actually spread apart a tiny bit. When you relax the squeeze, see if the fingers can relax into the new position. Notice any tendency for the PIP joints to spread apart, and try to avoid that.
d) Slowly lift *i* and pluck the 3rd string; let it bounce back then plant it back on the 2nd. This may seem quite awkward at first. Try to work through it by relaxing things more than tightening them, except for squeezing a tiny bit at the PIP joints. Don't lift the thumb out of the way.
e) Repeat each finger, including *q*, minimizing any abduction impulses.

Be very careful with this one as it's a weight-lifting exercise to tone the small adductors and *not* something that should happen during real play. It might even require the index to play off the "wrong" side of the nail. Most players today use the thumb side of the nail to pluck the string, but in this position the finger may be touching the string on the right side. This is OK for occasional therapeutic value, so let it happen if that's how the fingers are aligned.

Though abduction issues can be somewhat subtle for the plucking hand, it's a big issue for the more gymnastic fretting hand. When players squeeze in a stretched position, they often have the curved index or little fingers playing on the outside of the tip and even falling over sideways. This can be very problematic as it's better to learn to keep the fingers "standing up" straighter so the stronger muscles are doing the squeezing.

Pat's lessons on left-hand technique and adduction are explained in *JLSA* XLVIII (2015), "Monologue on the Left Hand," but I mention it because I found it useful to flip the guitar over and do those fretting exercises with my right hand, though I had to be careful with the nails. That was another time I got Pat to chuckle.

Epilogue: Happy Endings vs. the State of Focal Dystonia in Today's World

In the summer of 2016 my primary guitar teacher and dear friend Celin Romero invited me to take part in the Celedonio Romero Guitar Institute at Oklahoma City University, a 10-day intensive workshop with the entire Romero quartet giving private lessons and daily master classes to 36 students. When I agreed, Celin said, "Good, everyone does a concert at the end, and we can play the duet of Granados's 'Intermezzo' from *Goyescas*. What a moment that was! I started practicing like crazy. I also ended up playing the "Danza Espagnola #5" with Lito Romero, and Albéniz's "Granada" with Pepe Romero. What an incredible homecoming for me—to really be a musician again.

Meanwhile, on and off I've been monitoring the unfortunately slow progress of how the world is handling musicians' dystonia. Until just the past few years, most medical institutions continued to declare that it was incurable, and some still do. Yet over the years Pat helped a lot of people get full recovery, and there's a growing list of other musicians who have openly acknowledged they had FD and fully resolved their problem. And they seem to have done it through several diverse approaches. Unfortunately, no practitioner has been able to demonstrate an easily reproducible method with a high success rate. And though groups like Musicians with Dystonia and the Dystonia Medical Research Foundation (and many individuals using websites and social media) have spread the word about dystonia among musicians, many new "members of the FD club" still go through a long and painful period before getting diagnosed or finding any help.

I am currently trying to spur interest in studying the success stories to help evolve a better, quicker method of recovery. I encourage anyone who is interested to contact me directly.

The new Center for Music and Medicine (a combined effort of Johns Hopkins University and the Peabody Conservatory) is already working on one such project. But whether specific to dystonia or not, *all* music-medicine clinics deserve our support. Without a corporate interest to fund research, their only source of support will continue to be

the individuals who believe that we should do all we can to keep our artists healthy.

Musings on the Onset and Treatment of Dystonia

As for the actual cause of dystonia, in my most humble opinion we have to be able to admit what we don't know. Theories are important, but too often they're supported by assumption. We just don't know what makes the brain go backward and smudge the neurology. The most insidious element of FD is the *breakdown in the learning process*. In the early days people would exclaim, "How sad that you have to start over," and I'd explain that, after starting over several times, it's not a question of relearning basic guitar training. What was lost is something we learned in the womb. The basic tool of repetitions not only fails to yield results, it creates more damage. My go-to metaphor: We use repetitious practice as a fine technical pencil, drawing more and more detail to refine the map in our brains. Then someone swaps out the pencil with a dirty eraser, and the more we write, the more it gets smudged.

And yet, recovery ultimately comes from creative approaches in retraining. So this must also overcome the common and very serious Crisis of Faith in practice. Especially for those who spent years trying systems that didn't work, it's very hard to fully invest in yet another idea without deep reservations.

Some observers state the presumption, "After years of bad technique, it finally crumbles under the pressure." Even the FDP theory tilts toward this a little bit: Here's a structure that encourages co-contraction if you're not careful, and the co-contraction under pressure and repeated faster and faster can't be good. But when and how this might spur the brain to scribble all over itself is a leap we really don't understand.

And for me, that part really must have been a secondary condition, because my technique was based on leaving the tip joints relaxed. It was a complete surprise to find out that there was unwanted hooking going on. And I'd bet that it only came after I became more abusive in trying to fix things with more aggressive repetitions when all hope was lost. So that would mean my dystonia started under different conditions. My suspicion is that it wasn't years of something wrong, it was weeks of something wrong, and it was a fairly subtle wrong, but at high speed and with more power to be louder. Some other famous cases of FD came about after a nonmusical physical injury, and a relatively short period of getting back up to speed. So it's possible that FD has more than one cause, more than one flavor, and more than one cure. It certainly presents itself in myriad

ways, and people have a hard time believing they have the same thing as the next person when the overt symptoms can look so different. And most, but not all, current treatments seem to require personal customization. What, if any, are the common threads?

This gets me back to the hope that studying people who *have* been cured (and the methods that got them there) might yield a spark of inspiration that could simplify the process.

Whenever I say, "hope," one dear friend reminds me of his definition: *deferred disappointment*. Though that sounds pessimistic, I take it as a reminder that hope's fulfillment comes from action. If everyone reading this issue of the *Lute Society of America Journal* made it a point to talk to *all* their friends and family—not just musicians—about musicians' wellness and the need to support all aspects of keeping our artists healthy, that could have a huge impact. Every major city should have a music-medicine clinic because our symphonies and universities and, yes, bars have musicians with specific needs that range far beyond dystonia. But in a land where sports medicine abounds, our artists often have to cross the country to one of our few dedicated havens, or even go to Europe to get help.

Pat O'Brien is irreplaceable. But we have to do our best to shore up support for our musicians.

Recovery from Focal Dystonia

By Katharyn R. Benessa

I have always loved being a student and have reaped immeasurable benefits from many exemplary teachers, however, none have had more impact than Patrick O'Brien. It is no exaggeration to state that he changed the course of my life.

In the summer of 2013 I attended my first weeklong seminar held by the Lute Society of America in New London, CT. As a classical guitarist, my reason for studying lute was not merely a linear progression to expand my knowledge of the guitar to other plucked-string instruments. Rather, my guitar playing had been sabotaged 13 years earlier by a repetitive stress disorder called focal dystonia, a disorder so devastating that I could no longer perform or even play the simple pieces I assigned to beginning students. To remain in music I sought a new path, and so explored delving into early plucked-string instruments, repertoire, and technique. Patrick O'Brien's teaching not only brought me back to the guitar, but also was a catalyst in overcoming many limitations, as well as opening up other aspects of my playing on both guitar and lute. An additional benefit was the reformation of my teaching.

I am one of countless players whom O'Brien helped. The techniques he developed (and I struggle for the right word—retraining, therapy, rehabilitation—all three apply) not only had me playing again, but also altered my understanding of what constitutes a good hand position, thus making me a far more informed player and effective teacher.

This is how the whole mess started.

Development of Focal Dystonia

I began playing classical guitar at 13. I loved it more than anything, and persevered, studying music seriously through to master's degrees in guitar performance and music history. In my late thirties a problem with my playing emerged. At that point, I was enjoying a rewarding, weekly, three-hour gig at a wine bar. My repertoire included "Granados," "Cuba," and "Rumores de la Caleta" by Albéniz, most of the Bach Violin Partita in B minor, BWV 1002, Brouwer's "El Decameron Negro," Rodrigo's "Invocación y Danza," and dozens of smaller pieces. My shining technique—

JLSA XLIX–L (2016–2017)
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and the one that undid me—was the tremolo. In addition to the Rodrigo, I played Tarréga's "Recuerdos de la Alhambra," Barrios's "Una Limosna por el Amor de Dios," and "Campañas de Alba" by Eduardo Sainz de la Maza. It was an obsession, and not a healthy one.

Achieving a satisfying plateau in my playing and aided by the benefit of a regular venue that provided the advantage of immediate feedback and improvement, I was able to learn pieces rapidly. Some works I considered gig-fillers, such as Sor's "Grand Solo," while others were closer to my heart, including anything by Julio César Oliva. This period was the most successful, comfortable, and relaxed I had ever felt about my playing. Then, out of the blue, small inconsistencies began creeping into my playing.

In March 2001 was my last real concert. I had been working up new material, including Manuel de Falla's "Seven Spanish Songs," a very challenging set of pieces requiring a fast, strong arpeggio. I felt fully up to the task. Indeed, I was proud of the fact that my arpeggios had become so fluent. However, while working on this material, something went seriously wrong. I experienced a significant and startlingly rapid decline in my abilities. Suddenly I could not play a *p-i-a* arpeggio evenly or at speed. I pushed through that concert with an uneven performance and returned to the drawing board to figure out what had gone wrong.

Attempts at Recovery

The following section gives an account of the numerous attempts I made to regain my playing ability. Through this chronicle I hope to: 1) alert those experiencing similar symptoms of an as-yet undiagnosed repetitive stress disorder; 2) connect with the focal dystonia community; and 3) educate those who have never experienced a repetitive stress disorder so that they may recognize it in others. Many advanced instructors are not aware of how symptoms manifest, and may jump to the conclusion that a student has not been practicing well, correctly, or enough, despite protests to the contrary. Here I document everything I tried. Some attempts were rational, others, just stabs in the dark. At best, I hope to save someone time lost to unsuccessful experimentation. It is important to note that many professional players develop focal dystonia and are subsequently robbed of their careers. In fact, O'Brien came to develop his process and exercises due to his own repetitive stress disorder, tendinitis. I often wonder how many of my misguided attempts to cure myself crossed paths with O'Brien's own search.

I rationalized that my practicing had become nonproductive as a result of my weekly gig. Because I was burning through many new pieces,

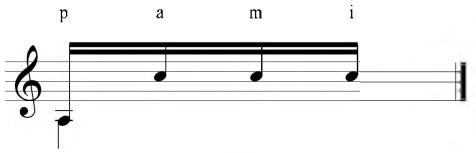
I was getting away from slow technical practice, and so I focused on the basics of technique: scales, arpeggios, and tremolo. Nothing was more problematic than the tremolo. My once shining technique had become ragged. Convinced that if I could conquer those techniques everything else would fall back into place, I initiated slow, methodical practice. In addition to inaccuracies such as missing strings and loss of control, I began to lose speed as well. Once a finger struck a string it remained stuck, curled near my palm, as if magnetized. There was no natural release of the finger. With great effort I would force the finger back to its playing position. The most problematic finger was *m*, the middle finger, but my entire hand was affected. In an effort to maintain a good position by force, my hand cramped up: the thumb collapsed in toward the palm, as did the ring and middle fingers, and this forced the index and pinky fingers to stick out farther. I later learned that the only dystonic finger was the *m* finger. It received confused and conflicting signals, causing it to not function properly. All the other problems were compensating movements, attempts by the thumb and other fingers to "help" the *m* finger do what it no longer could.

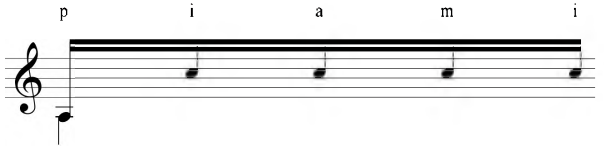
And so I continued to drill. Like any professional or semiprofessional musician, I was so well-trained that giving up or slowing down in the face of a problem was counterintuitive. Unthinkable. The tendency was to hunker down and work harder. I was a good student and this is what I was taught: more drilling! True to my training, I began working more intensively, but there were consequences to this continued and furious repetition. Little did I know that I was making every mistake in the book and insuring that my technique would continue to erode.

Research and Further Experimentation

With increasing frustration, and as yet no diagnosis, I pushed every possible technical button with the hope of finding that one elusive magic exercise that would steer me back to effortless playing. I tried binding pairs of fingers with medical adhesive tape; I experimented with exceedingly slow practice; conversely, I worked loudly and quickly in speed bursts; I adopted the five-note flamenco tremolo (*p-i-a-m-i*) (Examples 1a & 1b), reasoning that changing typical practice techniques and adding challenges would trick my hand into behaving; to keep *m* and *a* from sticking to my palm, I played holding the pinky in the palm, thus forcing my other fingers outward.

I was at my wit's end. The thing I loved most had slipped away, and what was worse, I had no explanation for it. The only forms of



Example 1a. Four-note tremolo.

Example 1b. Five-note tremolo.

musician's repetitive stress injuries I was aware of were carpal tunnel syndrome and tendinitis. I knew I was not experiencing these maladies because there was no pain or other symptoms. The only way to describe my experience was imagining that I had a stroke isolated to one hand. Searching for information in the early days of the internet yielded little: page after page of carpal tunnel- and tendinitis-related sites popped up before I finally discovered focal dystonia (thankfully, this is no longer the case). I had never heard of focal dystonia, but at last there was a condition that accurately described my experience. Still, the information was minimal. Often musician's dystonia was a footnote to other medical dystonias. Certainly, no cure was mentioned.

The best explanation I found of why focal dystonia developed suggested that the nerve impulses from the brain to the fingers were altered by excessive repetition. It seemed that after many years of fast repetitive movement, the nerves slowly rewired themselves by connecting impulses and combining functions. Rather than enabling numerous tiny, individual strokes, the brain decides to help by making all the fingers function as one, thus creating a far more efficient movement (but useless for a guitarist). This idea made so much sense to me and explained why my focal dystonia had developed when my technique had reached its peak of efficiency. It also explained why my playing worsened gradually, almost imperceptibly at first, and then rapidly, as I furiously drilled.

What was done could be undone, or so I surmised. But how? Despite enlightening knowledge of the disorder, my experimentation was no more successful than before. I obsessed over any type of repetitive motion in my right hand, oscillating between not using it at all to using the *m* finger exclusively. I considered replacing *m* with the mostly unused fourth finger, or pinky, and worked from Charles Postlewate's

Right Hand Studies for Five Fingers. I questioned whether exercising the pinky finger would awaken nerve signals to the brain and rebalance my hand.

Tremolo and arpeggio techniques had disappeared first, but eventually any repeated pattern was inaccessible. Plucking four-note chords in the Milán pavans was as equally impossible as playing tremolo and scales in Rodrigo's "Invocacíon y Danza." I fulfilled my last small gigs, which I endured with an increasingly clenched right hand and an overwhelming sense of loss and frustration. Without tangible improvement in sight, I eventually stopped playing and teaching altogether. Astonishingly, after playing for 27 years, I had quit. The thought would have been unfathomable to me if it had not happened so insidiously.

New Ideas and Therapies

After a hiatus of several years, I renewed my search for information. By then the internet had a bit more to offer. I learned about guitarist David Leisner, who recovered from focal dystonia by his own process. An article in *Guitar Review* (#133, 2006) detailed a description of Leisner's restorative method with photos of his technique employing the larger muscles and moving the entire arm to strike the string rather than moving only a finger. Other therapies were being discussed and I experimented with many, including sensory exercises, such as playing while wearing a medical glove, or stimulating the fingertip pads by touching scratchy surfaces. I created a homemade splint to prevent the finger from curving too much. Using the splint and moving my whole hand and arm in large arcs was promising. I could play many pieces up to a certain level, and I performed a bit with a duet partner, but there was no permanent change. Upon removing the splint, full-blown focal dystonia returned. Eventually, playing with the splint felt like faking it (and created other tensions in the hand), and that brief foray back into music became a humbling, painful reminder of what I could no longer do.

New approaches and therapies continued to emerge. I learned of varying body awareness techniques that were purported to help, specifically Feldenkrais and Body Mapping. Both of these techniques are beneficial for developing awareness of a lifetime of ineffectual physical habits, which leads one to "hold" muscles and frame inefficiently. Through these techniques I gained a better understanding of how to move my body and release muscular tension, and I continue to benefit from the work done. Feldenkrais sessions were the most beneficial. As

much a mental exercise as a physical one, it is a natural fit for musicians. I learned to release how I "held" my skeletal frame, freeing it to function more efficiently. Through several months of classes I became aware of more elegant ways to move in or out of any position. The process was equally relaxing and energizing.

While Feldenkrais teaches one to move more efficiently by practical application and experimentation, Body Mapping aims to deepen one's anatomical knowledge of how the skeleton moves at its optimum level, thereby removing inaccuracies of perception by changing the brain's faulty "map." While the concepts explored in Body Mapping sessions helped in a general way, there was a frustrating lack of consistency and applicability to my movement problems on the guitar. One of the issues was the practitioner's Aaron Shearer-based approach to guitar technique, which did not convincingly coordinate with Body Mapping. About six months into the sessions, I began a detailed log of my practice. With the recommended supinated hand position (forearm and hand turned in toward the guitar), I worked on the assigned Shearer exercises, which often exacerbated my dystonic symptoms. The exercises ranged from striking a single finger on an open string to small arpeggio patterns using *p-i-m* and *p-m-a*. I was instructed to employ excessive preparation in arpeggio exercises and to play these exercises with a metronome, gradually increasing speed. Metronome practice and preparation felt counterintuitive. This was precisely the type of practice that had caused focal dystonia in the first place, but I carried on.

Four months of logging my practice sessions provided no evidence of the effectiveness of the approach. The exercises were so dull and the improvement so negligible that it was difficult to maintain the motivation to practice. Every time my practice was interrupted for even a couple days, I would have to restart at the lowest metronome setting. None of the previous work had created even the slightest degree of permanent change or improvement. After 10 months of costly sessions, I came to the disappointing realization that I still could not alternate *i-m* on one string. I quit the sessions, more frustrated than before.

Thirteen years after acquiring focal dystonia, I found that sensory retraining exercises did not help, using a splint did not help, and Body Mapping did not help. I did not pursue other available approaches—Botox, doctors, or specialists—due not only to constraints of finances and location, but to their lack of appeal, as popular as many of these are. I was in contact with several musicians who attended sessions with specialists, and they subsequently shared what they could with me, but they had no more luck in improving than I did.

Differing Methods

Focal dystonia-retraining methods are divided between two camps, physical versus emotional rehabilitation. My belief that rehab needed to be physical was based on the rationale that if physical repetition got me into this mess, then it would get me out. Perhaps this reasoning was intuitive as well, but it is why O'Brien's techniques resonated so strongly with me: his approach is based strictly on physical awareness and change, and supported by anatomical knowledge, unlike my own haphazard experimentation. As I later learned, O'Brien took an anatomy class in his pursuit for answers, a step I never considered. He learned and internalized a practical understanding about the hand and arm. This was part of his genius, his relentless pursuit of all avenues.

Practitioners specializing in emotional rehabilitation often assert that focal dystonia develops from fear or insecurity, or the loss of joy and meaning in playing music. I never believed my symptoms stemmed from this premise. Indeed, I believe some of these approaches take advantage of the insecurities that all musicians face, whether professionals or amateurs. I remained committed to the belief that the cause was purely physical, a true repetitive stress disorder. Emotional distress was the bitter condiment.

Typically, with retraining attempts, I frequently experienced immediate improvement, followed by a marked decline. So why was there no lasting improvement in any of these methods? Was I doing something wrong? The fact is that any new approach in playing can temporarily bring relief and a sense of progress. A slight change in technique is enough to temporarily trick dystonic symptoms, disorienting them long enough to take on the disguise of improvement. The relief that comes with this positive feedback gives us enough pleasure to think we've found *it*: "The Method," or even, "The Cure!" And when we hit the inevitable wall, we return to our old narrative, telling ourselves it was just a bad day in a group of good ones, or blaming ourselves for not practicing the technique correctly, or long enough. A bad day quickly becomes a bad week or month. The truth is that no lasting change occurred and no improvement was made. The sufferer has chased yet another red herring.

Realization

Around that time I made a videotape. Since I had been working on my playing through these various therapies, I wondered if there had been any improvement, even questioning if the problem was as bad as

I thought. The truth flattened me—the awfulness and artlessness was undeniable. The interruption of normal finger movement caused musical stuttering, missed notes, lack of flow, and inconsistent rhythm. The playing was stilted, without beauty or joy. The unsuccessful forays into practicing—lured by the tantalizing glimpses of recovery—reminded me how much I missed playing, how intrinsically my life was tied to it. Life's experiences were processed through daily practice: it was nurturing and inspiring. Since I could not go back to a life without creating sound, the next step was figuring out what I could do and concentrating on that.

Rasgueado was still an available technique (extensor movement was not hindered), and I could do all the great thumb work indicative of flamenco. I tried to isolate flamenco music that utilized mostly rasgueado, but this kind of playing is best suited for accompanying dancers and singers, and there were not many opportunities for that where I lived.

Exploring the lute and the art of continuo playing for early music ensembles was another option. I knew, or was reminded by the last experience, that I was still musical. In fact, my faculty for expression and phrasing felt more assured, despite not having physically played for so long. The technique required to play accompaniment seemed attainable since it requires astute and sensitive listening more than the virtuosic skills of fast arpeggios and scales.

Lastly, to cultivate past passions for music history and theory, I returned to school to pursue a doctoral degree, thus broadening the subjects I could teach. Moreover, fostering competence in early music performance aligned with a degree in music history. For these reasons, I attended my first Lute Society of America summer seminar in New London, CT, no longer a guitarist, but somehow still a musician.

And I met Patrick O'Brien, lutenist and pedagogue.

Patrick O'Brien

Before the seminar, I wrote director Dr. Jason Priset about my circumstance as a once-advanced guitarist with focal dystonia, asking him to advise me on what classes to take. While my intentions were to gain more solid footing with the lute and period instruments, Dr. Priset informed me that faculty member Patrick O'Brien was a specialist in hand problems. Frankly, by this time I did not place much stock in the efficacy of any method, but I appreciated the gesture. Once there, after the first evening's introductory remarks in the concert hall, O'Brien approached me, and in his first few words, offered to help. I had no idea what was to come, but O'Brien's cut-to-the-chase introduction turned out to be a

game changer. The help he offered was real, immediate, life-changing, and gratis. Generous of spirit and with his time, O'Brien was a true and inspiring teacher and gave me one of the grandest gifts of my life.

PATRICK O'BRIEN'S DISARTICULATION THERAPY

The Exercises: Instruction and Practice

The following exercises are those that O'Brien taught me at the LSA seminar in 2013, including all the handouts he subsequently sent. I have included texts from our correspondence, which further define the exercises and offer support, as well as an additional lesson he taught via skype. I repeatedly offered to pay him for these lessons and the additional advice—he always changed the subject. Later I wrote him that I wanted to help others and share what he taught me, and I asked his permission to use the handouts. He replied, "Catching up on some e-mail a little late. Please share anything you want with anyone" (email, November 5, 2013).

So here it all is.

Preliminary Exercise: Moving from the MCP Joint

While sitting with O'Brien in a concert hall during a lute band practice break, he shared a bit of his own history with repetitive stress disorder. He was personal, intimate, and tearful, and I knew then that he had been through what I had, that he had been as heartbroken by it as I had, and that his intent and ability to help was genuine. From that moment he took every opportunity to instruct me, starting with my first lesson that afternoon.

It should be carefully noted that this and all subsequent exercises are not exercises to master and then move past, returning to the old ways of playing after achieving results. These exercises establish a new hand position, finger movement, and sense of looseness. They should be played daily as the way to set up the main hand position.

The first exercise is done away from the instrument and establishes the basic finger movements required for subsequent exercises on the guitar. O'Brien illustrated the finger movement against the velvet chair backs in the concert hall. Allowing the fingertip joints (called the distal interphalangeal [DIP] joints) to collapse or give fully, brush your fingertips against a cloth surface such as an upholstered chair, couch cushion, or against the knee of your jeans (i.e., a textured, rather than a slippery material). Extend your fingers and brush them gently as a group against

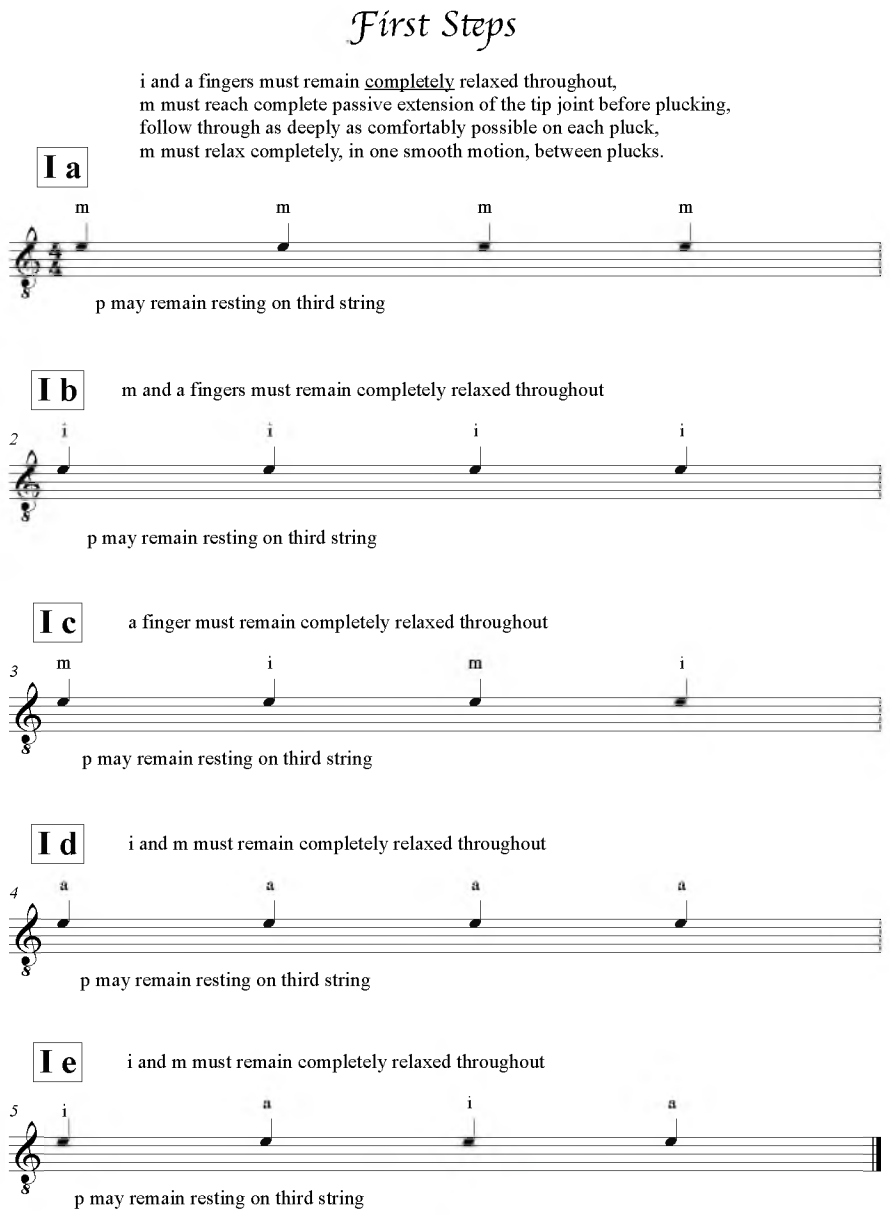
the surface in toward the palm. Allow the DIP joints to completely relax like the bristles of a paintbrush, then release the fingers back to the neutral position from the large knuckle joints where the palm meets the fingers (the metacarpophalangeal [MCP] joints). Complete this movement slowly and deliberately several times.

Next, execute this movement one finger at a time. While the other fingers remain out, move the index finger slowly in toward the palm, allowing the fingertip joint to relax fully and release out from the MCP joint. Continue with the middle finger, then ring finger, and even the pinky, several times for each finger. This exercise is about creating a relaxed, soft move, allowing the DIP joint to fully give, or collapse. I still do these exercises often, returning to the image of a paintbrush and the softness and flexibility of the bristles. Another helpful image is to imagine petting or even picking up a fluffy baby chick. It is this soft, giving-way of the fingertip joint and relaxed follow-through and release that can be continuously cultivated and improved. There is no stress or "work" in this movement.

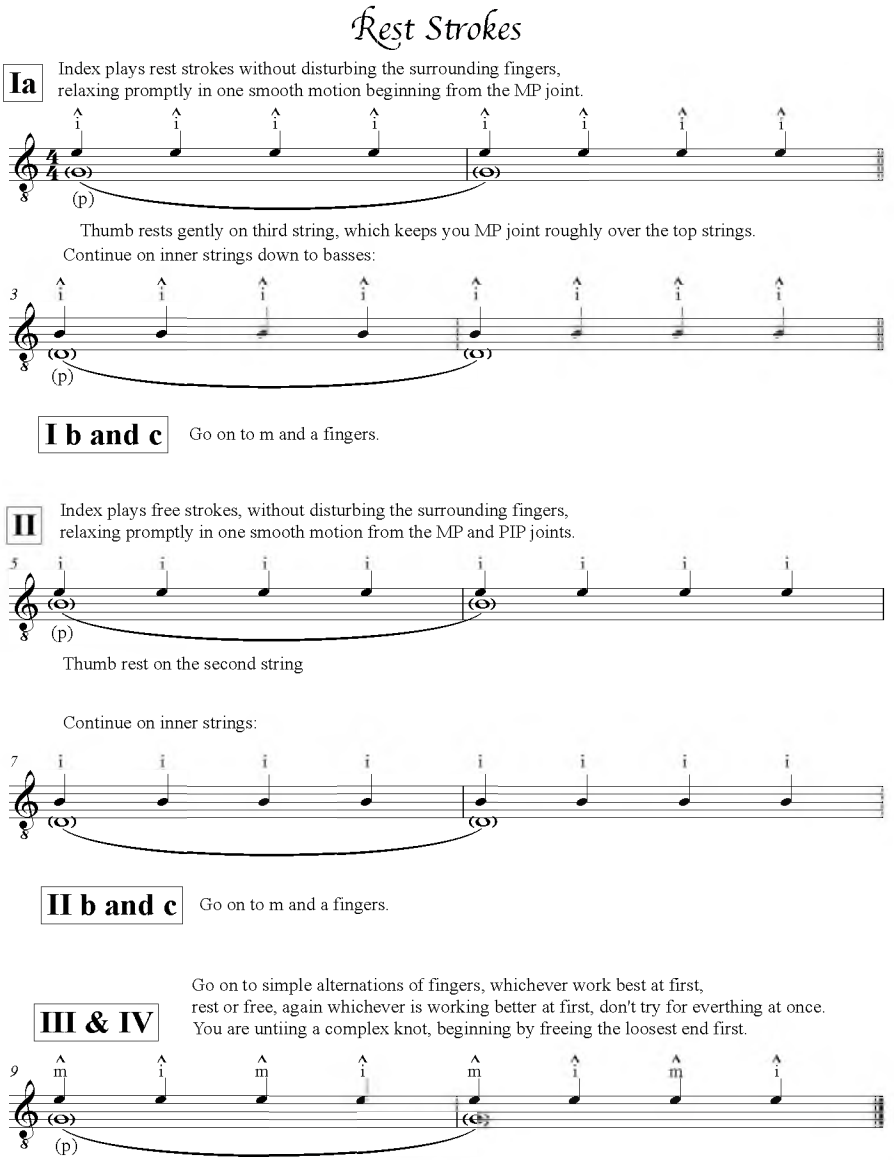
First Exercise on the Instrument (Handouts 1 and 2)

Of these first handouts, O'Brien entitled one "Disarticulation Therapy," a name I find myself returning to frequently as it perfectly demonstrates O'Brien's clever, pithy wit, as well as the basis of his revolutionary approach. I will return to this concept at the end of the lessons (Examples 2a & 2b).

For the first exercise on the guitar, rest the thumb on the 3rd string. This will place your hand in position over the treble strings with the *a* finger hovering over the first string. Place the index finger against the first string in preparation to play, touching the string, but not playing it. What the rest of the hand is doing now is equally important: allow the remaining fingers to dangle or hang loosely. The fingers should not curl or curve into the standard C-shape playing position. Now observe what the index finger is doing as it rests against the first string. Players with dystonia may experience mild to severe shaking at this point. They are instructed not to play yet, nor to hinder or control the shaking in any way. As the finger rests against the string, allow the DIP (tip) joint to fully collapse (which may further increase the shaking—that is okay). The player should not release the stroke until the shaking completely stops, *no matter how long it takes*. This is the first step to playing without dystonia. Once shaking stops, let the finger play with a large follow-through toward the palm, then release the finger *straight back* from the MCP joint



Example 2a. Disarticulation therapy handout by Patrick O'Brien: First steps.



Example 2b. Disarticulation therapy handout by Patrick O'Brien: Rest strokes.

without pulling or popping up, even minutely! When O'Brien gave me this instruction I thought, "Well, obviously! I have *always* released out, not up." I considered it a basic tenet of my technique, reinforced early and often in my studies.

Nevertheless, after careful examination I was extremely surprised to discover otherwise in one specific and telling instance. All of my fingers released out properly, as I had expected, *except one*: my *m* finger (the dystonic one!) released by pulling up, very slightly, and then out, creating a subtly circular motion. To clarify, this technical flaw of pulling up occurred because I was not getting clearance on the release. As the longest finger, the back of the nail of the middle finger would have grazed the string on the release, and so I developed, unknowingly, a slight lift to clear the return. Imagine repeating this tiny pulling-up movement thousands of times during tremolo and arpeggio practice. I believe that movement was the origin of my dystonia. Observing this, I adjusted my hand. You may find you have to lower the hand (over the treble strings) and perhaps arch your wrist *slightly* more.

The idea of collapsing the DIP fingertip joint is an adjustment not easily accepted in modern guitar technique. It is something trained out of our technique from the beginning of study. Simply, it is not permitted. However, it is an essential part of O'Brien's method and not optional. Even if the player does not have dystonia, I recommend experimenting with this technique. Believe me, nothing bad will happen to you, or your fingers, or the guitar! Unless you are a young player, you may be surprised by how little the fingertips now actually yield. As you execute this type of movement, see if you can notice a difference in tension, not necessarily in the finger, but in the tendons of the wrist and along the forearm.

Repeat this exercise with the same finger several times without rushing to "master" the exercise or attempting to "practice" it. Then proceed to the middle finger on the first string, always allowing the tremor or dystonic shaking to completely stop before playing. For these exercises, never use a metronome or attempt to maintain a regular rhythm. As I said, it was working on this exercise slowly and deliberately that showed me that I did in fact pull up very slightly with my *m* finger only. Another sensation that will reveal itself when playing slowly and fully attentive to every movement, is that some fingers feel more fluid than others. I found that my *a* finger felt the loosest with the least sticky release. Indeed, when isolated for this exercise, the *a* finger felt almost like how I remembered normal finger movement to be. It became the exemplar of the feeling I endeavored to regain in the rest of my hand, and I constantly referred back to it.

One challenging aspect of this exercise was allowing the fingers that were not playing to hang loosely rather than curving into a nice hand position. I asked O'Brien for verification of this position, and the following is our exchange:

KATHARYN BENESSA: While playing one finger and keeping the other fingers completely relaxed . . . that means the relaxed fingers remain "hanging" and slightly, naturally curved, and do not move sympathetically with the finger that is playing, right?

PATRICK O'BRIEN: Yes. For now I want the unused fingers hanging completely limp with no attempt to hold any kind of normal playing position like an arpeggio or chord shape where they each aim at their respective strings. Right now the hidden tension which might be in their tips when you hold them over the strings is to be avoided. Eventually you can trust yourself to hold such a position from the middle joints of the fingers and not the tips.

BENESSA: And with the arpeggio pattern *imia*, should I be preparing/planting at all?

O'BRIEN: No planting. The default position of an unused finger has to be relaxation "for the duration of the emergency," as they used to say in WWII.

Mostly, you have to be able to monitor the complete relaxation of the idle fingers right now and memorize a new standard for relaxation (email, July 24, 2013).

Relaxation is discussed in other retraining therapies, but in a more general way. Being instructed to relax while maintaining one's old hand position is quite different than allowing the fingers to hang loosely. Again, even if you do not have a repetitive stress disorder, try this technique of playing with a collapsed fingertip while allowing the rest of the fingers to hang loosely. It is not easy. You may be surprised by how the fingers want to hold (or push) themselves into a trained, curved hand position and how that physical expectation translates into excess tension.

O'Brien sent me two handouts with various versions of this exercise. Obviously, he altered and adjusted his exercises over time as he further refined his approach, and made allowances for each student's different issues. One exercise employs rest stroke and moves to the

second string, leading quickly to alternation of fingers. The second version, which is the one I primarily worked from, keeps whatever finger that is playing on the first string and uses free strokes. On page two of that handout, he offers additional instructions on variations of these exercises:

> At some point it might be valuable to attempt adjustments in this basic format:
>
> 1) rest strokes,
> 2) moving the thumb to rest on lower strings,
> 3) plucking the fingers simultaneously with a rest stroke [on the] bass notes,
> 4) what is perhaps the most difficult alternation, *m* and *a*,
> 5) alternation of fingers on separate strings, as in an arpeggio.

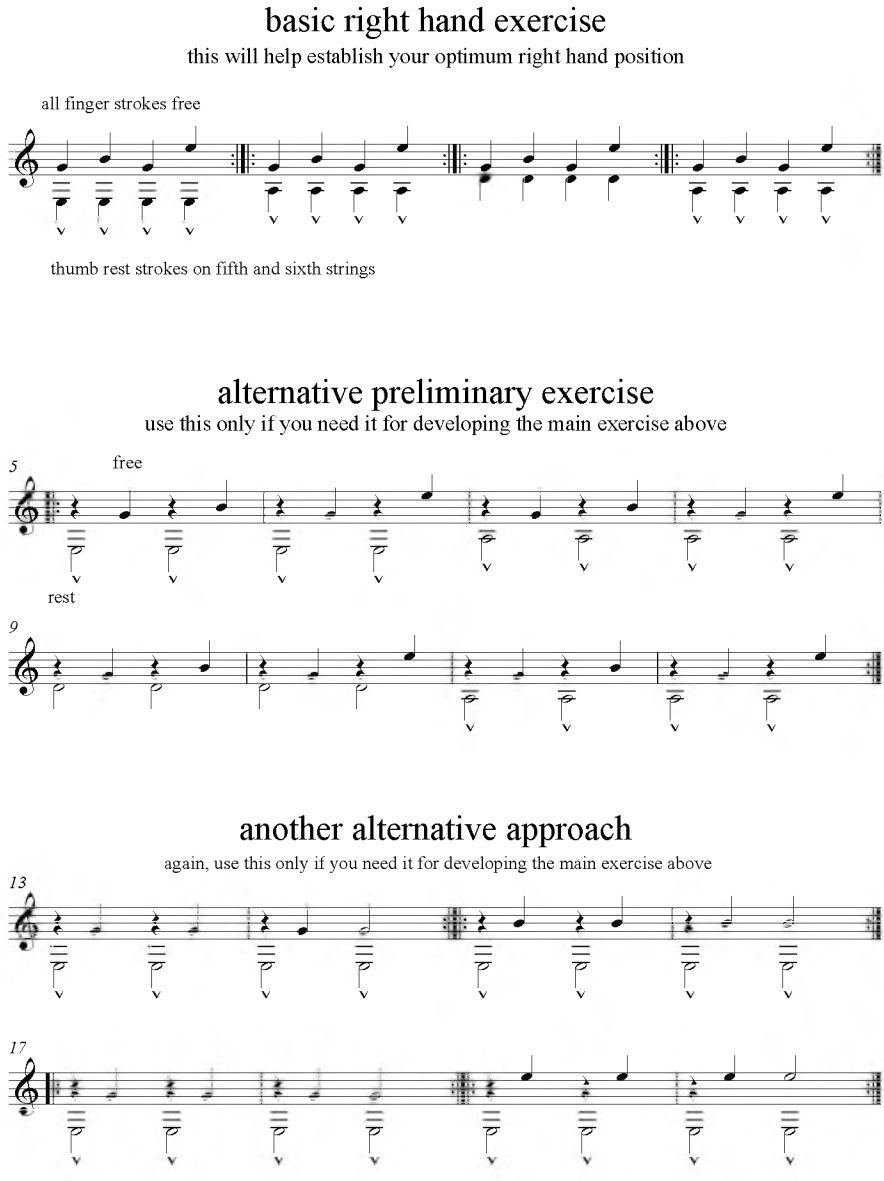
Further, O'Brien explained that it is not important to work diligently through each exercise and variation. "Of course none of these have to go in this particular order. Everyone is different. The key is totally relaxing your tip joints. Once upon a time most people played this way. You may have to shift your palm further out over the trebles and almost certainly broaden the arc of your nails" (email, July 22, 2013).

This is not the type of practicing that sets up a goal of mastering each combination before proceeding to the next. The player must learn to observe and listen carefully and let go of striving to accomplish anything. Rather than focusing on what is most difficult, the instruction is to first work on whatever is easiest, proceeding only when ready.

In the correspondence above, O'Brien mentions broadening the arc of the nail. He demonstrated to me how to find the best nail shape for this new hand position. Place the finger against the string and let the dystonia subside. Look closely at where the nail contacts the string and notice if there is any hook, curve, or point of the nail protruding. Shape a broad, flat surface so that the largest amount of nail makes contact with the string. With this technique I find I keep much shorter nails, especially for the *m* finger, which is beneficial because that slightly compensates for its length.

Exercises Coordinating for Fingers and Thumb

The next lesson is titled "basic right-hand exercise" and advises that "this will help establish your optimum right hand position" (Example 3).



Example 3. Basic right-hand exercise in notation by Patrick O'Brien.

It sets up the hand and coordinates finger and thumb movements for both consecutive and simultaneous strokes. On O'Brien's handout I added letters A, B, and C for clarity. A, at the top of the page, is the end result. Most players with focal dystonia will need to lead up to that, and therefore should start with C or B. I started with C. For *all* of these exercises, the thumb will play *rest stroke* while the fingers play *free stroke*. This is not an optional step, but an intrinsic part of the setup for a solid hand position.

The first exercise above placed the hand lower, hovering over the treble strings. From that vantage, add rest stroke thumb, which means that the thumb will explore a wide range of movement at its largest joint near the wrist to reach up to the bass strings without moving the fingers away from the treble strings. Many players may find this challenging if they were previously stretching the fingers to the treble strings while moving the thumb less.

Whether playing notes consecutively as in Exercise C or B, or simultaneously as in Exercise A, the thumb plays a rest stroke, starting on the sixth string, while the index finger plays a free stroke on the third string. Continue the exercise with *m* on the second string, then *a* on the first string. Again, the fingers that are not playing must hang loosely, as before. Playing this simple exercise without dystonic tremor required patience. It was almost two weeks of working on these exercises before I experienced a release of tension from my hand.

When I first started, I practiced these lessons several times a day for no more than 10 minutes at a time. Once I noticed some improvement with Exercise C, I moved to Exercise B on the handout, using the same approach, and finally, several days later, to Exercise A, in which the thumb and a finger play simultaneously. Overwork and over-practicing are not going to help. In my experience, not rushing this stage was vital to my progress.

The brilliant effectiveness of this lesson compared to other retraining methods is that every problem within the hand is addressed in one exercise: the dystonic finger, the compensatory movements of the ring and pinky fingers, and especially the compensatory movement of the thumb, all balance out and begin to work independently. For myself, and I know for many others, the compensatory movement of the thumb created issues eventually surpassing the problem caused by the dystonic finger. O'Brien's exercises completely erased the problem with the thumb. Although I am still working to gain finger speed for some arpeggio patterns, the issue with my thumb completely disappeared after the first couple weeks and *has never returned*.

To summarize, the major points to follow are:

1) relaxing the tip joints like a paintbrush,
2) playing with a large follow-through,
3) releasing straight from MCP joint without any circular lifting,
4) keeping the fingers that are not playing loose and extended,
5) keeping the hand position low over the 1st string,
6) shaping the nails to create a broad flat surface.

Timeline

There are many expectations and outlines for how long one can expect focal dystonia retraining to take. I have seen videos claiming improvement in a couple hours. The therapists releasing those same videos also say that the player can expect treatment to require one year, and that they should expect setbacks along the way. I have also seen practitioners tell clients that they are now cured, even though they have not gained back many skills. There are certainly many ideas out there that work, but dubious procedures and therapies are abundant. Of course, I do not know the success rate of O'Brien's method or if he kept records. I also do not know if one ever fully recovers from focal dystonia, but I know that regaining most of one's skills is possible, and after navigating through a labyrinth of different approaches for many years, the progress I experienced with O'Brien's exercises was relatively rapid and has been long-lasting.

After only a couple weeks of playing these simple exercises (and nothing else), I was comfortable enough to try my most challenging techniques. With considerable work left to do, I refrained from returning immediately to repertoire. Continuing to work slowly, carefully rebuilding technique and stamina, I suffered no setbacks. Within four months I returned to working on repertoire, and two years later I continue to see improvements in coordination and speed.

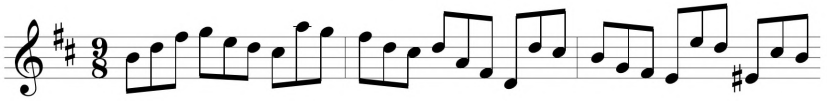
This is how my condition progressed:

After three days of working on the exercises, I experienced increased shaking of *m* and *a*. I wrote O'Brien asking about this new development. He asked, "How much are you doing in a session? That is, how much time are you spending?" (email of July 29, 2013).

I explained that I was doing short 10-minute practice sessions four to five times a day, starting with the exercise away from the instrument, then building from the first exercise with one finger alone on a string, and finally on to the thumb and finger exercises.

He concluded, "You are likely in a "research and development" phase rather than a production phase. Sometimes the shaking is your body trying to separate crossed wires and decide which method of motion is the right one" (email of July 29, 2013). His patience and straightforward explanations responses always calmed me.

After one week of the same practice, I experienced some muscular twitching in my right upper arm, like electrical jolts. It was an odd sensation, but not at all painful. My interpretation of the sensation was that these new movements were causing the fascia—the tissue surrounding muscles—to release their old way of "holding" my muscles in certain positions. If that is accurate, this indeed was leading to real rehabilitation.

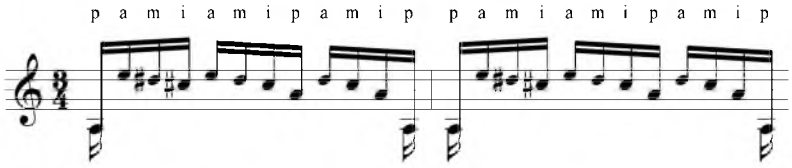
It took about 10 days of this same manner of practicing before there was a reduction in the tremors and a decrease in tension or resistance from the fingers that were hanging loosely. The freedom and openness within the hand was new and so encouraging (after 15 years of extremely inhibited playing) that I was tempted to try a piece. I got out the Bach Double, which had been my go-to piece since I was an undergrad, and I played the A section (Example 4). I could play and *locate* all the strings and notes without tremors, which seemed nothing short of miraculous. Resisting going further, I returned to O'Brien's exercises, which I now loved and appreciated for their ability to treat the entire package—hand, fingers, and thumb—with one all-encompassing technique, thus creating a completely balanced machine.

Example 4. Bach Double.

I wrote to O'Brien telling him of my success. He responded: "GREAT! Finger alternation slowly becomes slow scales whenever you are ready [so] stay slow, smooth and independent in your right hand, relaxing each plucking finger before you engage the next, and do all that while the left is busy.

"Arpeggios are harder at first. Remember how far out over the treble you have to place your hand for the first free strokes? You have to do that for arpeggios in this way: place the hand way out over the trebles for a really loose free 'a' finger on the first string. That means you aren't placing the right hand just for the index's convenience or even the middle. You have to be all the way out for the 'a' on first string and stay there. That means your thumb is going to have to reach back to the basses from there and thus play mostly rest strokes on the bass strings" (email of August 6, 2013).

He later reminded me to keep the fingers that are not playing loose and hanging: "and the flexed index fingers with no effect on the middle fingers" (email, August 12, 2013).

The main difficulty lay in resisting the temptation to return to old repertoire and practicing too much. There was instant gratification in picking up a piece and making music, like a diet of candy and potato chips, but playing too much created pain the next day. My hand was out of shape. To regulate myself and gradually build up technique and stamina, I pulled out the Julio S. Sagreras *Guitar Lessons*, Books 1-6, and resolved to work through it, page by page, careful not to complete more than a few pages a day. The Sagreras method was my own idea and chosen because it contains many small exercises or pieces that increase in difficulty very gradually. Since most of the material was unfamiliar, no old habits could creep in. By week two I was up to Lesson 19 in Sagreras, Book 2. Since I had barely been able to play two consecutive notes cleanly for 15 years, my hand was out of shape and tired quickly. When the lessons became more challenging, I returned to Book 1, page 1, and started again, watching that my hand remained loose. In this way I continued carefully building skills and stamina with a new hand position. I began incorporating other études, including those with previously problematic patterns, such as the descending arpeggio in Brouwer Étude #6, one of the most challenging patterns for players with dystonia (Example 5).



Example 5. Descending arpeggio in Brouwer Étude #6.

I did not practice the études in the traditional way. I did not attempt to play even remotely correct rhythms. I executed a stroke only after the required finger or fingers were completely relaxed, tip joints collapsed, and other fingers loose. I definitely did not use a metronome. The point of this practice was in *building skills* by executing the different finger combinations required for each exercise, with the added benefit of creating pretty sounds and not being bored by tedious repetition. There was no attempt to create a cohesive, flowing piece of music. With the fingers hanging loosely, it can feel like there is no control and the tone may not be what it was. Do not try to manipulate that result. Remember that O'Brien named his approach Disarticulation Therapy—I did not attempt to articulate the stroke or line of music at all. As the looseness got easier, I found

I did not need the level of control I once thought I did, and eventually my tone began to improve. I was committed to the process, proceeded slowly, and enjoyed holding the instrument and moving my fingers.

I did not advance to the next step until after doing the above exercises as well as working on simple études. This took two months, as I waited until the dystonic symptoms declined significantly. I did not try to replicate a proper hand position. Encouraged by the looseness of my hand, I attempted more challenging techniques such as tremolo and crossed-string trills, two techniques I never thought I would regain because of the finger independence required, and yet now I found them completely accessible, albeit far from strong. Thrilled by my progress, I videotaped myself playing these techniques and sent the files to O'Brien. Ever the perennial teacher, rather than focusing on my accomplishments, he saw only what was left to improve.

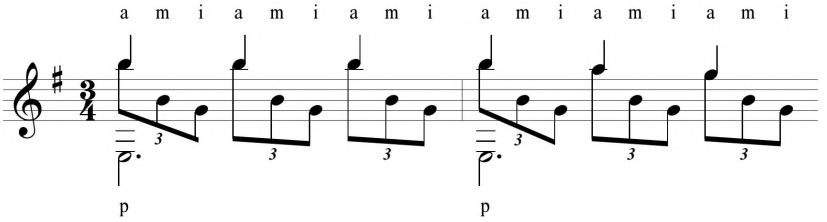
We skyped approximately three months after I initiated working on the lessons, but because it took a while to coordinate our schedules, it is likely I could have moved on to the following step at two months. I was now prepared to relearn how to play with a normal hand position, allowing my fingers to curve without the trademark compensatory movement of the pinky, and sometimes the ring finger, popping out.

Using a Thimble

To facilitate the adjustment to a normal hand position, O'Brien recommended I acquire an accountant's thimble, which is a plastic tip that fits over the finger. (I found mine at an office supply store, and they are called "Rubber Finger Tips." Do not use a sewing thimble—they are made of metal and will scratch your guitar!) Placing the thimble on my *a* finger made it longer and allowed the finger to stand on the soundboard. Resting the finger on the soundboard creates stability, while the thimble adds necessary height to the length of a finger, allowing the basic hand position to remain unchanged. Finding the thimble too loose I put in it some cloth to prevent it from falling off. O'Brien then assigned the following studies: the Aguado arpeggio étude in A minor (op. 6, Lesson 19) and the Carcassi Étude #7 (from the 25 *Études*, op. 60). The Carcassi étude has a three-note repeated pattern, like a tremolo; however, O'Brien instructed I play it *i-m-i*, rather than *a-m-i* in order to keep the *a* finger in the thimble.

Being assigned the little Aguado piece was an unexpected and satisfying surprise. Most guitar teachers who develop focal dystonia have one piece that is the harbinger of the demise of their playing. These pieces are typically for beginners and are taught often. For many it is the descending

arpeggio of the anonymous Spanish romance (Example 6). For me it was the Aguado étude. (Example 7) I had been teaching it to a student, and during the lesson I realized I could not play the simple arpeggio pattern for even one measure.



Example 6. Descending arpeggio of anonymous Spanish romance.

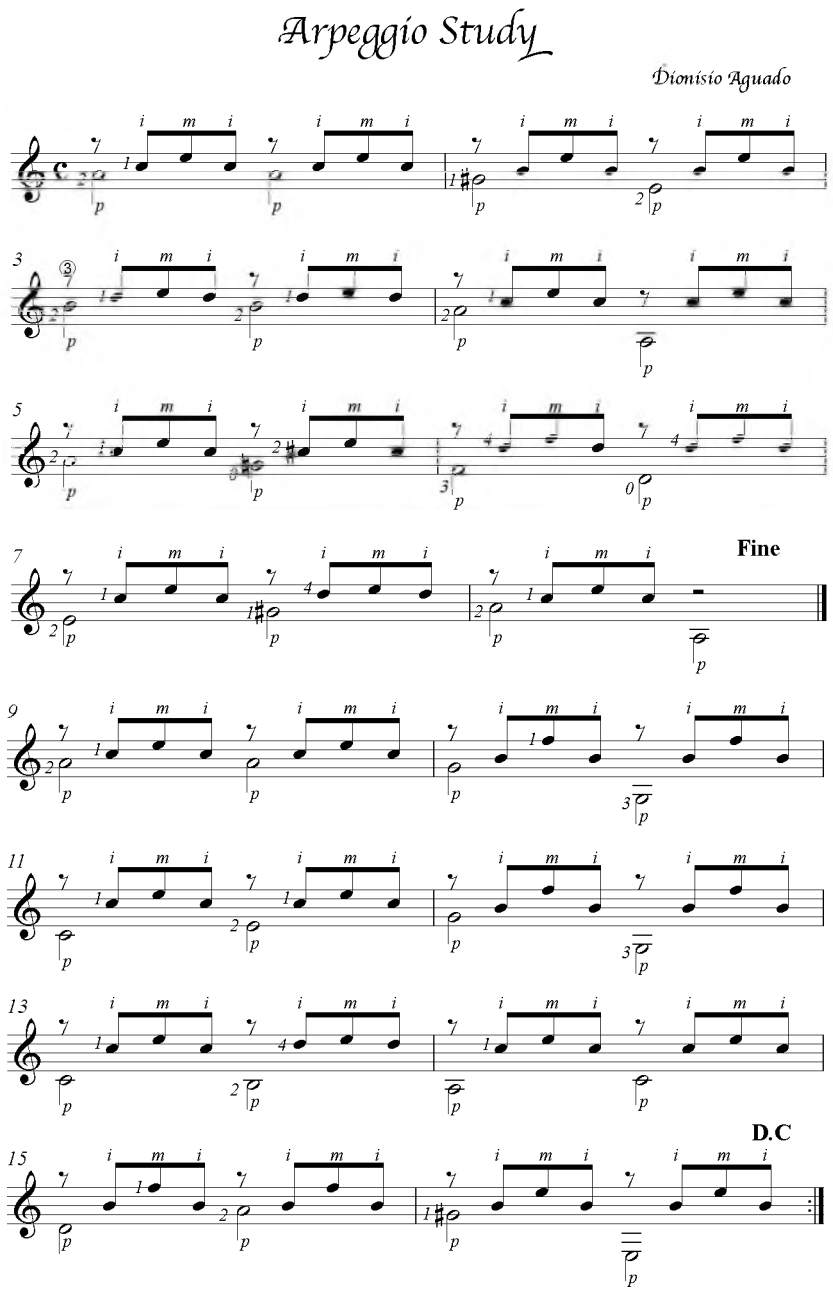
Slowly practice the Aguado with the ring finger in the thimble resting on the soundboard. The finger may want to pop out in compensatory movement but should eventually settle down and tension will leave the entire hand. After the Aguado becomes comfortable (several days), add the more challenging Carcassi étude (Example 8). I found it was sufficient to work only on the A section. As the *a* finger began to feel comfortable in that position, I moved the thimble to the pinky finger, working on the same études, but that was my own variation and not part of Pat's instruction. Moving the thimble to the pinky may not work as well for all players since the pinky is typically a significantly shorter finger and the hand position could be altered (I added more cloth padding to make the pinky longer).

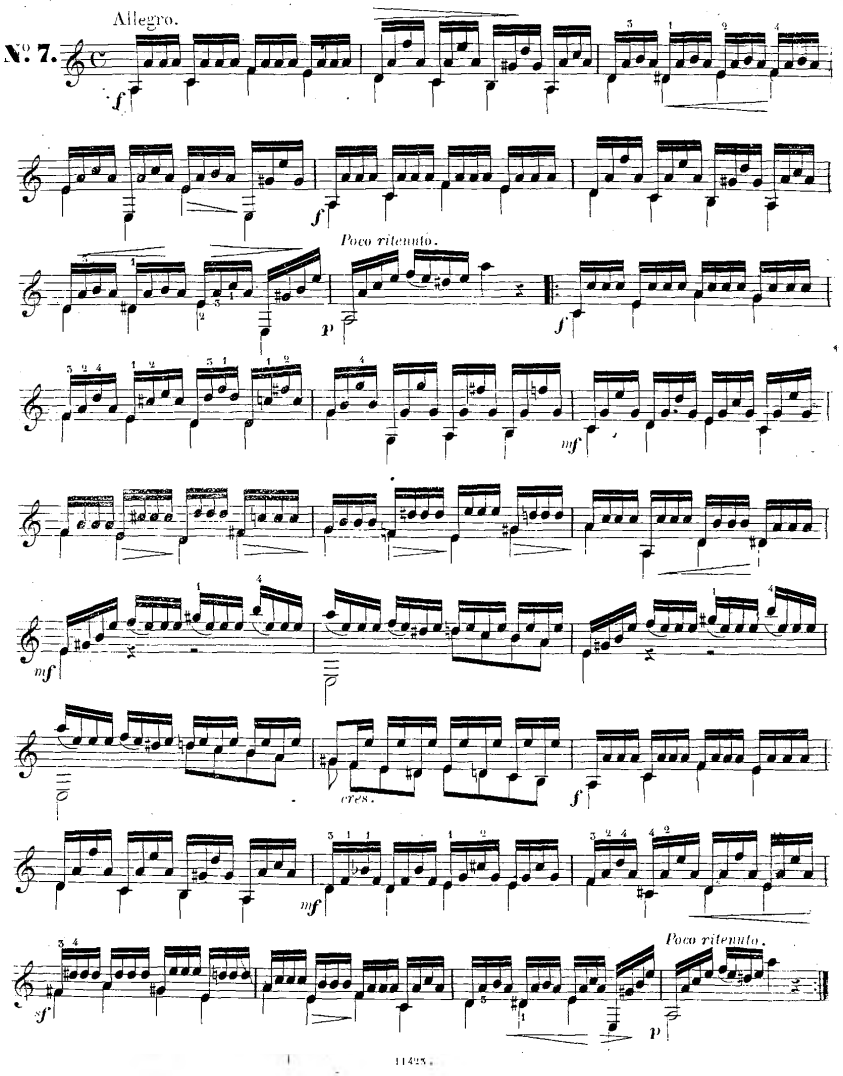
There is most assuredly a relationship with this thimble exercise to lute technique in which the pinky rests on the soundboard, and it is one element particular to O'Brien's approach. If he did not have a background in lute, he may never have arrived at this option. Classical guitarists have long rejected planting the pinky on the instrument, lumping it with what are considered mediocre folk techniques. It may be time to rethink this viewpoint.

After four months of retraining and sticking to the exercises described, I started working on repertoire in earnest. Favoring short pieces that did not rely on constant arpeggios or scale work, I aimed for modest successes.

End Results

This is not a miracle cure that will have guitarists playing Villa-Lobos études at breakneck speed in five months. Perhaps that result



Example 7. Aguado arpeggio study typeset by Patrick O'Brien.

Example 8. Carcassi Étude #7. Matteo Carcassi. *25 Etudes Mélodiques.* (Mainz: B. Schott's Söhne, n.d.[1852]).

is possible for some, but I have not yet achieved it. What I have accomplished is the ability to play again in a tangible way, unattainable only a few years previously. Currently in the final stages of my doctoral degree, writing a dissertation, and teaching 10–14 credit hours a semester, I have little time to practice. Many days the only time I play is when I teach, but focal dystonia no longer hinders my playing of students' repertoire at all. That, in itself, is a tremendous breakthrough.

My own assessment of my level of recovery is this: in many works I have regained 80–90 percent of my previous skills, while in works that focus on arpeggio or tremolo I play at about 60–70 percent of my previous abilities. I do not have tremendous speed yet, but even that is improving. Frankly, speed is no longer a focus of my practice. I am diligent about bookending each practice session with Pat's Basic Hand Position Exercise, ensuring that looseness and ease are always cultivated, and indeed, expected. Over the course of this long journey my musical goals have changed, so the attraction of returning to repertoire I was proud of 15 years ago has not been a compelling factor. I have been so contented to *just play* that my priority is more on phrasing and expression rather than technically flashy works. Certainly, I am no longer interested in filler pieces for long gigs or wedding receptions. Concentrating on small gems that require less investment of time, but considerable rewards of charm and beauty, has led me to Llobet's Catalan folk-song arrangements and lots of Torroba. And I am playing Bach again, one significant holdover from my past. From the B minor Violin Partita (BWV 1002), the allemande and the sarabande pose few problems, while the more arpeggiated doubles require careful attention to remain loose and untangled. I have tried my hand at tremolo in a short piece by Torroba and the technique is there, but I am patient in building up speed and no longer "woodshedding" tremolo.

Why it Works: Back to O'Brien's "Disarticulation"

Increasingly, I forget I ever had focal dystonia. I do not experience a loss of skills if I cannot practice for a few days, and a long warmup is not needed to get into real playing. There have been no setbacks or backsliding, but when I do miss too much practice or notice any stickiness of movement, I return to O'Brien's exercises, making adjustments, playing slowly and deliberately, and then after a day, or even a session of this slow, careful work, I am back to playing repertoire at the same level. This all feels like a normal practice session, unlike the experimental practice sessions I was doing before. There have been no tricks involved—mental

or physical. There have been no expensive treatments, nor the heartbreak of thinking I have improved, only to lose it again, as frequently occurs in other treatments. I am not questioning my mental state or wondering if there exists some emotional trauma I need to overcome, as many practitioners assert. In fact, the more I practice, and practice properly, the more my symptoms improve. No matter what is going on in life or how I am feeling, I know that I can pick up my guitar and practice, in many ways just as I did before the onset of focal dystonia, only now with newly refined skills.

Other available treatments—splints; playing different permutations of arpeggio patterns while employing techniques such as moving other parts of the body so that one is distracted from thinking about the hand movement; doing metronome work as a gauge to measure improvement; or sensory exercises (like playing while wearing a surgical glove)—may have the wrong end of the stick. I consider splints and sensory exercises as "tricks," to a certain extent. Not that these approaches may not work for some people, but success seems arbitrary; practitioners and students *think* these ideas *might* work, although they are not entirely sure how, so they throw all the techniques in a bag, shake them up, and dump them on the player to see what sticks. Furthermore, these techniques are means to an end and are discarded once symptoms wane and the player returns to regular playing. If there was any aspect of their technique that caused focal dystonia, it may not have been identified or permanently changed. After several months of recovery via these techniques, it is not unusual for players to experience a renewed onslaught of dystonic symptoms. This occurs because they do not know what aspect of their technique actually was altered, and therefore cannot maintain it without the external trick.

The exercises and process that O'Brien developed are elegant and easy to replicate on one's own. The entire hand is balanced, with fingers and thumb playing together, but working independently. Other than exercising the patience to not go too quickly or skip steps, or to quantify improvement by means of a metronome, the main challenge to the player is to be willing to give up old habits and ideas. Months of expensive sessions are not required. In my case I received a handful of short one-on-one sessions over the span of a week, followed by written feedback to my questions, and one skype follow-up session.

Consequently, while I was retraining I wondered whether the hand position exercise would work for my students. Its ability to set up the optimum right-hand position is important for all players. I asked O'Brien if he recommended the Right-Hand Position Exercise for regular students:

"Yes, I do use that same exercise for guitar. When combined with a rest stroke of the thumb on guitar it moves the hand out over the treble strings a bit and produces a hand position which looks and functions like the best of Segovia's playing. That usually convinces the older players to try it" (email, May 21, 2014).

He elaborated later the same day: "In old film of Segovia when the camera views him from the front his fingertips are well under the palm of his hand as he plucks" (email, May 21, 2014). I now teach this to all my students and it successfully creates a good hand position, with the hand nicely curved, the fingers close to the strings and loose, and it is simple to return to when the hand goes astray. Ultimately, I believe O'Brien's therapeutic approach can lead to a reevaluation of how guitar technique is taught.

From Articulation to Disarticulation

Articulation is a term often employed to suggest bringing out or expressing a musical line. It suggests added emphasis, whether that is accomplished by using rest strokes for the sumptuous melody of a Spanish romantic piece, or differentiating polyphonic lines in Bach. Often articulation implies a stroke that requires some kind of preparation or planting. This means that while some fingers are playing, others are anticipating what comes next and moving into position. Navigating multiple signals and sensory feedback simultaneously is what a musician does, many hours a day for 10, 20, or 30 years. It is not difficult to see how confusion can develop between the impulses the brain sends to the fingers that are playing versus those that are not (and hence the development of focal dystonia). Pat's Disarticulation Therapy retrains the fingers to work independently, and without residual or compensating movements occurring in other fingers.

I now avoid a lot of planting or preparation in my playing, and it is not easy. That technique is ingrained! All those years of training taught me that planting was synonymous with articulation, offering a higher level of control. However, I have found that I do not need to prepare as much as I thought I did. Using only the fingers needed the moment required and not anticipating the next move is very difficult to get accustomed to: it feels out of control. Furthermore, much of the desire to plant for articulation has to do with the tone we expect to produce from a very precise stroke. I had to give up that expectation as well. When I began working on the first Sagreras exercises in this loose manner, my tone was not what it once was and I had to fight my expectations. The good news is that after

I became comfortable with the loose hand and the unprepared stroke and began trusting my fingers to play the right notes at the right time, my tone returned.

O'Brien's idea of allowing the rest of the fingers to hang loosely is one of his exceptional concepts. Many other approaches, especially the use of splints to maintain the typical curved hand position, attempt to retrain the hand based on that central position. The problem is that because we have trained the entire hand to function as a unit, it is difficult to retrain independence from this same base. Allowing the fingers to dangle is one step in recovering independent, unconfused movement between fingers. Eventually, the playing of one finger will not cause the other fingers or thumb to act or react. That is how dystonic symptoms will be trained out of the hand and new, clear nerve impulses developed.

I am assuredly *not* advocating to not teach preparation or planting. It is a vital part of our technique and gives players, beginners especially, a basis for creating a stable, reliable hand position. The negative impact of preparation arises after long hours of intense practice for many years, as tackled by professionals and semi-professionals. O'Brien touched on this point. If you have ever taken one of O'Brien's classes, you look forward to his seemingly wandering, yet ultimately focused, analogies. One day he talked about how some people develop writer's cramp (which is also a form of focal dystonia) and how some typists acquire tendinitis. He explained how the development of the ballpoint pen led to writer's cramp. Before the invention of the ballpoint pen, people used an ink pen with a nib that had to be filled. With a nib you cannot press too hard or ink splashes out and paper is torn, so the hand had to be more relaxed to write and the writing had to be slower to not create any of the above problems. With the development of the ballpoint pen, people could write faster and the grip could become quite tight. He said that it was the combination of tension and speed that leads to writer's cramp. Likewise, early typewriters had a slower response, and the QWERTY keyboard layout was developed to slow down the typist to prevent the machine from jamming. When the electric typewriter was introduced, jamming became less of an issue, to the point where speed tests were developed. One can understand how this relentless typing "virtuosity" for many hours a day can lead to tendinitis.

Likewise, playing with relaxed fingertip joints also gives, at first, a feeling of lack of control to articulate or shape tone. However, this technique aids the release of tension in the entire hand. O'Brien's explanation as to why it is important for the release of a stroke straight out from the MCP joint rather than pulling up and creating a circular motion, is that the pulling up is a kind of flinch or fear response, which stems

from tension and is not a healthy movement to repeat excessively.

All of these tenets establish finger movements that create and result from the least amount of tension possible. You can experiment with all these movements away from an instrument: pick up small objects with the fingertips rigid, then again with them relaxed; move the fingers freely from the large knuckle, then conversely pull them up in the flinching motion. Observe changes of tension. The place I feel the greatest difference in tension between these two movements is in the tendons of the wrist and the forearm, but I can also feel a difference up to my shoulder blades.

O'Brien's therapy simultaneously addresses the balance of the entire hand and the developed glitches of each finger. His approach develops a hand position that he advised for everyone, not only for those afflicted with a repetitive stress disorder. The metronome is not used; one's gauge for progress is . . . progress. The problem for many players with this approach is developing patience. It is not that the process takes long to result in improvement—it is relatively fast—but to stick with it, to not be distracted into moving too fast, to commit to the new hand position as a permanent change to one's technique—these seem to be the areas where players lack patience. In the end, O'Brien's method taught me to get away from mindless drilling and the pursuit of virtuosity over style, beauty, and freedom of movement.

Conclusion

The best teachers inspire their students with both facts and new perspectives. Pat O'Brien, like many of his generation in the early music field, was an autodidact and therefore imparted not only inspiration, facts, and perspective, but his process and journey. His knowledge was less filtered through previous teachers and arrived at via his own queries and conclusions. He would have been the first to say that this is not always the most direct or efficient path, and dryly noted, after discussing a litany of failed ideas and experiments, that it is always the last idea that is the successful one.

Thanks to his sacrifice to the process, he developed an unequalled knowledge about plucked-string instruments, early music, and, specifically to this article, a highly refined approach to the technical aspect of playing. And as he taught himself, he became uniquely suited to teach others. Pat's genius—well, one of its facets—was to never stop questioning and to never settle, even if he found good answers. He continued to question, explore, and refine. He gave me a real solution with almost immediate improvement and consistent progress, and I

have been able to continue improving because of the process. It is a tremendous gift.

How serendipitous it was that, after accepting the loss of my ability on guitar, I headed to Connecticut to study lute, and found the guitar once again. The force was Pat. He taught hundreds of people to play lute and recover from technical problems. And yet, I felt like I had discovered him, like Indiana Jones cutting through the brush and coming upon a hidden treasure. I imagine all his students feel like that. And as with all wonderful teachers who treat their students as peers, he became a dear friend for the brilliant short flash of time I knew him.

I booked a flight for the following year's LSA seminar in Cleveland to continue lute studies, and was looking forward to further instruction from Pat. He suggested, "We should probably take a moment to look at your dystonia progress. Perhaps set some further goals." But he was unable to attend that seminar and died shortly thereafter. Sadly, I will never know what other pearls of wisdom he had to offer.

It is my hope that this article will do several things: educate others about focal dystonia, encouraging discussion and reducing the stigma often associated with repetitive stress disorders—it is an epidemic in the plucked-string world and significantly underreported; encourage other recipients of O'Brien's tutelage, especially well-known teachers and performers, to talk of their struggles, ideally filling in any gaps in my lessons or elaborating on further instruction O'Brien may have offered; and finally, to honor Pat O'Brien and his revolutionary approach to playing.

ADDENDUM A

The Throes of Guitardom

Although *JLSA* is a scholarly journal devoted to the lute and period instruments, many lute players come from the guitar, which is often the gateway instrument to early music, and some keep a foot in both worlds through teaching. Moreover, O'Brien once intimated that many players delved into period instruments due to developing focal dystonia. As explained in this article, O'Brien strongly recommended his right-hand position exercise as a basis for all guitar players. To that end, I share the following correspondence we exchanged about the guitar, its size, strings, and wood.

At one point I tried some new carbon fiber guitar strings. I was distressed as dystonic symptoms returned, and I suspected it was due to

the change in the strings. Their texture was so glassy and slippery that I was not receiving any sensory feedback, causing my hand to tense in order to produce results. I asked O'Brien about strings recommendations for guitar:

"Wow. I forget you're still in the throes of guitardom. I hate the tendency toward bigger is better in modern life, which extends to longer string lengths, heavier strings and higher action. Many of the very clear, far-projecting guitars of previous times were shorter. Old Hausers we hear so much of were often 63.5 or 64 cm. They were played with lower action and thinner strings. Super-heavy strings have fewer upper overtones and thus do not project as well but seem to tolerate more and more aggression from the right hand so we think we're playing louder. Carbon fiber, being of considerable higher density than nylon or even gut, has to be made thinner, leaving us with less string to grip. Also carbon fiber is very smooth, meaning it slips loose from our fingers unless we tense up and hook our fingers into it even more.

"A recipe for disaster, that!

"I would use a medium-ish nylon string, which is usually brighter and thicker and gives more of a sensation of friction against the fingertip as you seek to relax the tips. (This problem was much less common when people played gut strings partially because tensing the tips would tear up gut strings very quickly.) I might even use Savarez strings, the roughness of which originated in an attempt to make them grab your fingertips like gut. They make a little whistle against the nails which people make a big deal about despite the fact that the audience doesn't hear it. (More about that another time, running to the subway right now.)" (email of Jan. 16, 2014, 7:05 am).

And later that same day:

"At work now ... I love what you say about the glassy tone (and feel?), of the carbon fiber strings. Something of my model is the responsiveness of the gut I play on 19th century guitars and early instruments but on modern guitars I grew up on nylon and will probably stick with it. Carbon fiber actually works on the inner strings of some lutes and theorboes but I have never liked it as a treble. It seems metallic in sound and affords no grip with which to control the tone and articulation" (email of Jan. 16, 2014, 8:41 am).

After this conversation I decided to experiment with nylgut strings on my guitar because of their texture and tension, and have been very happy with them.

Regarding instruments: I had previously been playing a cedar-top Ruck built in the 1980s, which had a rich, warm, caramel sound that I

loved. I commissioned a second Ruck more recently and debated a long while before deciding on spruce, so I was curious about his opinion and asked what wood he recommended for classical guitars.

"Always spruce! It has the upper overtones you want to play with. Cedar does not or loses a lot of them pretty fast. Smaller, lighter, spruce . . . all things that have been largely lost in recent guitar generations. ob" (email of Jan. 16, 2014, 12:00 pm).

ADDENDUM B

Basic Lute Technique

For my first LSA summer seminar, I was unsure of what classes to take. I was apprehensive about signing up for the beginning lute class, since I am far from a beginner on guitar and had played some lute and vihuela repertoire. I had even briefly played lute (as a guitarist under duress) in collegium for an ensemble requirement as an undergraduate under the supremely patient Robert Castellano. I knew I could step into any of the classes offered at the seminar, but I value a solid foundation and decided to take the Beginning Lute Class before I ever met Pat O'Brien. What a treat it was.

I understood quickly how invested O'Brien was in teaching a proper hand position. He described the hand in detail and began with a discussion of problems that can arise, including focal dystonia. I was suitably impressed.

In other classes I met more guitarists, some of whom were doing what I initially had planned, which was to play lute employing guitar technique. I am ashamed to say that as a classical guitarist, I may have considered the thumb-under, pinky-on-the soundboard, renaissance lute technique as a somewhat *lesser* technique. And for that reason alone I am so pleased I took O'Brien's class. His description of renaissance lute technique, the rationale for it, the beauty and the ease of it, and how the technique serves the music, was absolutely convincing and made me think of lute repertoire differently. It was a wonderful revelation.

Playing with thumb-under technique does not take as much adjustment as one might think. Guitarists with focal dystonia often find themselves limited to using only thumb and index finger anyway, so the transition was natural. Planting the pinky on the soundboard was another issue altogether.

In the lute class we practiced different permutations on open strings, moving from the elbow with a hand-shaking motion from treble

to bass strings. The exercises he gave for this first step, I still practice. In fact, it was not until many months later, as these exercises became more comfortable, that I realized when I played lute I had *absolutely no dystonic symptoms at all*.

Apparently I was not the only one. In preparation for the following summer's seminar, I wrote the LSA director and included a carbon copy to O'Brien: "I am doing well retraining from focal dystonia, thanks to Pat. And I'm finding that focal dystonia doesn't seem to affect lute playing AT ALL!" To which O'Brien replied: "Many people find this, especially with renaissance lutes and thumb under playing" (email, June 7, 2014).

Moreover, there is the connection to his thimble exercise for focal dystonia retraining. Without a background in lute it is unlikely he would ever had developed this exercise, which created the perfect transition from playing with the fingers hanging loosely back to a curved hand position. I wonder what he learned in his study of anatomy that suggested the planted pinky was a healthy hand position for lute, and one enabling a healthy hand position on guitar, rather than being a crutch?

I see now how maintaining a "guitar hand" can be inelegant on the renaissance lute. Due to the closeness of the strings to the body and the covered sound hole, it is difficult to play *into* the strings as one does on guitar, or to strike both strings of a course with consistency.

All the pieces he shared with me in class and later via email are now quite easy. Anyone who studied with O'Brien will recognize all them: "Robin Reddock," "Bergamask," and "Passing Measures" from *William Ballet Lute Book*; "Soet Oliver," "Calleno," "Llantero (the Boar's Dance)," "Bonnie Sweet Boy," "Grienslivis" from the Folger manuscript; "A Dump," "Willson's Wilde," and the duets "T'w lesons to be plaid with tw lowtes" and "Bergamask" from *M. Board Lute Book*, the latter also arranged as a solo. I am now turning to Francesco da Milano pieces, which I first learned on guitar. I also soon hope to play vihuela and French baroque pieces on their intended instruments, which I have commissioned from luthier Alexander Batov. My main obstacles are not related to hand position, but in dealing with the mirror-image presentation of Italian lute tablature, and being able to mentally translate tablature into notation. These obstacles are the typical ones every musician faces, and I am thankful that I can explore them like a normal student of music without physically limiting issues. Taking the plunge with O'Brien's beginning class was one of my better decisions!

Note to all guitarists: it is worth it to learn the lute and to learn it properly.

ACKNOWLEDGMENTS

In addition to Pat O'Brien, there are several people I must thank: fellow sufferer Richard Thurstans for years of discussions about focal dystonia; Ruth Cutcher, for being my duet partner while I could barely play; Robert Castellano, my first lute teacher—I was a reluctant student of lute then and he was still able to influence my stubborn brain; my first two guitar teachers who are on par with Pat: Philip de Fremery and Deborah Fox; and finally, sincere thanks to Douglas Alton Smith, whose guidance, suggestions, and astute observations inspired me, and ultimately made this a much better article.

Focal Dystonia Therapy with Patrick O'Brien

By Jack Silver

OVERVIEW AND LESSON 1

My Particular Focal Dystonia

In May 1989 I rang the doorbell of Pat O'Brien's apartment in New York. I had heard of his work with guitarists having hand problems from a seminar he had given at one of the International Guitar Festivals in Toronto. My particular problem was simple to describe but baffling to understand. When I played free stroke, the tip joint of my middle finger involuntarily extended. There was no pain. For some reason, after 20 years of playing the classical guitar, my middle finger no longer worked properly. This made it impossible to perform arpeggios or scales. I had been working around the problem by using my thumb, index, and ring fingers exclusively, excluding the middle finger. This was not a solution, of course. I had come to Pat hoping he could help me overcome this impairment. I had two long lessons with Pat in May and in August. This was followed up by several telephone discussions. I was overjoyed when, after months of very slow, careful work using Pat's suggestions, the dystonia began to abate. By October 1990, at slow tempi, there were no signs of the involuntary extension of my middle finger. My progress continued, and by 1991 I could resume learning and performing repertoire. This article will detail what I believe led to the development of the dystonia, the contents of Pat's teaching to me, and the course of my practice, based on his suggestions, to cure this perplexing condition.

Causes

1) When I began to play the guitar in September 1966, I was self-taught and had no inkling of the proper way of using my hands. I had never seen a classical guitarist perform, and my initial efforts were purely instinctive. The only guideline I had was Aaron Shearer's guitar method. Despite my ignorance, I developed a measure of facility, but I had no understanding of what I was doing. I believe that this lack of knowledge set the stage for my later difficulties.

JLSA XLIX–L (2016–2017)
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2) I first had lessons in September 1968. My teacher focused only on repertoire and never spoke about how to move my hands correctly.

3) In July 1970 I attended the Jeunesses Musicales music camp at Mt. Orford in Quebec, presided over by Alexandre Lagoya. There, under the tutelage of his assistant, Paul-André Gagnon, I was introduced to the concept of the "attaque à droite." This involved turning the right hand wrist sharply to the right and playing off the right-hand side of the nails. It was uncomfortable at first, but I got used to it. I was advised to keep a fairly arched right-hand wrist, to keep the fingers laterally compressed, with overlapping fingers, and to keep the fingertips firm. There were two consequences. First, I developed a full, round tone. Second, however, my facility in executing arpeggios and scales declined. I was told that this was temporary and that the speed would return with sufficient practice using the new method. Unfortunately, this never happened. I continued to use this approach until 1976, when I changed to a straight wrist approach. During this period I studied with students of Presti and Lagoya, the duo of Ako Ito and Henri Dorigny, and gained a Premier Prix d'Interprétation in 1972 from the Conservatoire National de la Région de Nice. It had become clear that many guitarists using Lagoya's approach were developing severe hand problems, ending promising careers. Most abandoned his methods. I consider my involvement with this faulty approach to the right hand to be the origin of my later dystonia.

4) Between 1976 and 1982 I practiced and played very little, as I was in a full-time nonmusical university graduate program. However, in 1982 I returned actively to the guitar. My practice regimen increased to around four hours a day as I worked on technique and repertoire. I continued to have no understanding of the actual mechanisms involved with right-hand technique. I consider this sudden shift from hardly any practice to an intensive routine to mark the beginning of the emergence of the dystonia.

5) I began to study regularly in 1983 with a concert guitarist in New York who suggested I arch my right-hand wrist even more. I did so. This, in my judgment, was a contributing factor in the development of my right-hand problem. To give an idea of the difficulty of the repertoire I was studying, I was working on technically ambitious repertoire, including the Villa-Lobos études and Bach's Prelude, Fugue, and Allegro, BWV 998.

6) The focal dystonia developed incrementally. It began in 1985 as sluggishness in the return phase of free strokes with the right-hand middle finger. This phenomenon subsided in the course of practice sessions. However, by 1988 the dystonia was in full force. I had applied for a competition sponsored by the Royal Conservatory of Music in Toronto that paid winners a stipend for giving recitals in a variety of venues for a year. I was able to reach the final round. Unfortunately, the dystonia was so pronounced that I refingered my entire repertoire to use only thumb, index, and ring finger, excluding the middle finger entirely.

7) I finally faced the fact that something had gone seriously awry in my right-hand technique. After the competition I began to work with a guitarist in Toronto who had been a student of Pepe Romero. I was hoping he would have some insight into the source of my difficulties. Unfortunately, although he tried to help, none of his suggestions had any effect. In April 1989 I had a private lesson with Bill Kanengiser, who provided the first concrete observation, amplified the following month when I went to Pat O'Brien. Bill observed that "When your middle finger is returning, even at slow tempi, you are doing so in a tense way, you're pulling it back, you're not allowing it just to return by virtue of its being relaxed. There's a tension throughout the entire range of the stroke." It was Pat who explained why this was happening and pointed the way to a solution.

Pat's Analysis of My Problem

The first thing Pat told me was this: "Ninety-nine percent of the time, when anyone has a problem like the one you describe, a thing called 'deep flexor tension' is involved." He explained that there were three classes of flexors.

The lumbricals, located in the palm of the hand, bend the metacarpal phalangeal joint, the knuckle joint. There are four of these. He pointed out that "This is the primary flexion system with which you should be playing."

The flexor digitorum superficialis muscles bend the middle joints of the fingers. These muscles are located in the forearm. "You can engage them independently," Pat noted.

Finally, there are the "flexor digitorum profundus" muscles. These, he told me, are the problematic flexors: "Where it comes to a head, the four tendons that go out to the fingers are attached very close together,

in a gristly mass. It's not possible to pull one tendon without affecting the others. . . . If you tighten any fingertip, the others will want to go along. The problem is that we try to fight it using the extensors. The only way to keep the adjoining fingers from moving is by not using the flexor digitorum profundus muscles. Whenever you have overuse of the deep flexors, you run into the kinds of problems you have."

Observing my playing, Pat commented, "Once you begin fighting between one finger and another, for example, tightening the tip of *i*, finding *m* wants to follow, you try, therefore, to stop *m* from following by triggering the extensor opposite it to hold it out. Usually what happens is that the *m* extensor learns a peculiar pattern of turning itself on at odd times. It has to work against the tendency of *m* to want to follow *i* or *a* inward, or both. Sometimes it gets so bad it pulls the *m* finger out involuntarily. Basically you taught it to turn on all the time to hold the finger still and it has learned that lesson too well. It would rather at times prefer to hold the finger out there than have to pull it out even two millimeters."

He concluded, "There has to be a way to leave the finger relaxed, so it doesn't go in with the other finger without having to hold it out. You can do tremendous damage to the extensor of the middle finger." He explained that the purpose of botulinum toxin therapy was to paralyze the involuntary movement of a finger, like the *m* in my case. It was a case of treating the symptom and not the cause.

"This dystonia is always preceded by deep flexor tension and by prolonged effort to hold other fingers still. Most of what I do to train people to get out of this problem—which they can do if they haven't overdone it—is through gentle stuff to work yourself out of it."

Contributing Factors to this Problem

Pat went on to explain to me why he considered this problem had become so common among guitarists. He pointed to the modern abandonment of the rest stroke as a factor. In a rest stroke, the tip joint relaxes naturally and the deep flexors turn off. The fingers operate independently and the follow-through is small. The problem arises when one plays with tip tension in a free stroke with a big follow-through.

The evolution of modern guitars—bigger, heavier, with high-tension strings—was another element. These guitars need to be played with tension and strain. Older guitars were smaller, brighter, requiring finesse, not power.

He returned to the matter of the elimination of rest strokes as the "greatest disaster" for the right-hand thumb. He joked that Aaron Shearer's

students "fall by the wayside in droves. They keep me in business forever." Pat advocated the use of lots of rest strokes in the bass. "It moves your hand out over the strings; your knuckles move towards the treble, from which position you can play a treble free stroke, relax the tips of your fingers, and not hit the next string."

He cautioned that the absolute avoidance of firmness in the fingertips was not essential when everything was working well. "It is possible to hold the tip firm in some situations. I have to be absolutely vigilant that people let go completely all the time. I have to be absolutely sure they've turned that system off, the deep flexors. I have to start with everything relaxing."

He advocated that we begin our daily practice with lots of rest strokes, one finger at a time, to gain the sensation of relaxing the deep flexors and activating the lumbricals.

He pointed out that the degree of extension of our fingertips varies not only among players, but even in the fingers of an individual's right hand. "Some people go in a couple of degrees; some people don't go in at all. When you ask players to let go of their fingertips, they'll tell you their fingers won't go back that way. I'll say, 'The point is not that your finger won't go back, the point is that it doesn't go forward.'"

Preliminary Advice

I've mentioned Pat's suggestion that we use lots of rest strokes in warming up and in playing. It allows the tips to relax and extend naturally. But we can't use rest strokes all the time, so we have to position the fingers in free strokes in such a way that the tips are encouraged to relax.

"When you play a free stroke, most people can't get it to relax at the tip. I have a huge number of different exercises that will make them do it. But roughly, if you get your knuckles way out over the trebles, maybe even further out over them, there's a point, when you're coming down with your fingers, when they reach the bottom and start to rise away from the top. If I set my hand so that when I'm playing a free stroke on the rising part of the arc of the finger, then I don't have to tighten my tip to clear the next string."

He proceeded to give me a simple exercise to achieve this. He put his *p* on the 1st string and then played free strokes with the fingers, individually, on the 2nd and 3rd strings. "You see, I'm reaching into the trebles way under my palm and playing a free stroke with my tips absolutely relaxed. My other fingers have a chance to stay still because I don't use the deep flexor at all."

He then gave me another exercise that involved strumming of

individual fingers. He demonstrated by strumming his index finger over the strings from the 1st to the 6th. "This teaches you how to turn on your simplest and best flexor motion, which is really only the knuckle and middle joint." Then he extended the finger in a strum from the 6th back to the 1st, a one finger rasgueado using the back of the nail. "It gives you the sense that the flexor motion and the extensor motion are mutually exclusive, that they never happen together."

Pat emphasized that the use of the deep flexors can occur at any point in the stroke: "sometimes it's when you get to the string, sometimes when it's on the string, and sometimes it's even after you pluck on your clearance on the way back up. You're afraid it's going to hit on the way back, so you pull the tip joint out. You might not be able to hear this tension; it might not be in an audible part of the stroke: it could be in the release."

Alternation and the So-called Exchange

This was a very important topic, and I will quote Pat verbatim.

"There's another trick in modern teaching which has a major problem. Working on scales a lot, there's a tendency for people to tell you that you should get two fingers to cross each other like a scissor. You see, when you play fast, it looks like that. But what you're doing when you play very fast is you're playing each finger and then you're relaxing it as soon as you can. It so happens that you're relaxing it and the other finger is coming in at the same time. So it looks like they pass each other. That's what a high-speed picture looks like. Put that down in slow motion. But what would happen if you actually did that in slow motion is this: you'd play a note and relax. You'd play the next note and relax, and so on."

The erroneous "default setting" for free stroke alternation is to pluck a note and then hold on until the next finger comes in, even if, say, it's five minutes later. That means that over the course of five minutes of playing, if there is a five-minute-long note, you're under tension rather than at rest the whole time.

"The classic thing you will see with people who are taught to drill those scales endlessly is this: they will play a melody, alternating, and after playing with a finger hold it in tension. If the note is, say, three measures long, they're still holding. So they never actually relax."

Strong and Weak Accents

"An odd thing that happens on the lute and still happens in 19th-century guitar is this. If you play a certain kind of a rhythm, you play

strong-strong-weak in terms of your fingers, as you do on the lute. You see this all the time in 19th-century books. That is, you see a long note with a strong finger and then strong-weak for those last two notes." Pat illustrated by writing a quarter note followed by two eighth notes: he played the quarter note with *m*, and the eighth notes *mi*. In other words, he did not alternate strictly. "This approach presupposes that you automatically, in default, just let the *m* finger go. It always falls loose. We teach ourselves a system which doesn't permit ourselves to release. So if we are trying to hold that tension in the tips, not only are we holding the tension, which we don't necessarily want to do, but we're holding it all the time.

"I teach people to begin with a relaxation of the tip. And if they want to play slow scales rest stroke, the fail-safe stroke, I simply have them let go after every stroke. This means that they'll sometimes play *m* (1/4), *mi* (1/8), *m* (1/4). During the pause the finger relaxes, and they can do that again rather than *m* (1/4), *im* (1/8), *i* (1/4). The first gives you an authentic accent pattern relating to the lengths of your fingers—*m* being longer than *i*; the second gives you no authentic accent pattern. The technique of crossing the fingers the wrong way—playing the weak finger on the strong beat and the strong finger on the weak beat—is a very recent idea in music history and probably a very bad idea. The longer lever is *m*, the strong finger."

String Vibration

Pat observed that the top of a guitar vibrates up and down, like a drum. The object of a vibrating string is also to move up and down. The string should be pressed downward so that it pops up. It shouldn't be pulled side to side. "We're trying to store energy in the string just before the stroke, pushing it straight down. That's what a rest stroke does so well. If I loosen the tip and do a free stroke, I can still sort of do the same thing. It still uses most of its energy downward and doesn't pull it sideways. Pressing downwards is the key. And then whatever finger is longer is going to push it down even more."

Four Crucially Important Exercises

Exercise 1: Simple rest strokes, each finger individually. The finger is relaxed in the air, just in front of the string. You bring the finger to the string, press downward. The tip joint bends back (to a greater or lesser degree depending on your natural anatomy). You release and the finger comes to rest on the next string, tip still bent back. You lift from the

knuckle joint and the finger bounces back to its starting point. The action of the bent tip returning to a neutral position facilitates the return. Do this on various strings, observing the four phases of the stroke.

Exercise 2: "Place the thumb on 1st string and play the inner strings underneath the hand. Try to touch the very tip of your finger all the way as deep as you can to the heel of your hand. That's what a good stroke should look like. Certainly that's what it looks like when you strum. If you close your hand with all your fingers, you'll realize your string has got to be at the bottom further in so that you can rise and play a free stroke. What you need now is to turn them all off. Anyway, that's the motion—just touch the heel of your hand. You should be loose enough to get them all the way down there. You have recorded these for posterity—the sound of one hand clapping. To be more precise, after you put the thumb on the 1st string, place the index on the 3rd and pluck a totally tip-loose free stroke. Imagine, as you follow through, your goal is to get to the heel of the hand. And then let go. Slowly, watch the middle finger be totally loose. A rule in checking these things is don't watch the finger actually playing. Watch the adjacent finger. Give yourself a couple of seconds back at rest after the finger returns. You're trying to train a new neurological system. You're trying to train yourself to think differently to your fingers. The index only plays. You leave the middle completely relaxed, you leave the tip completely relaxed. The index follows through to the heel of the hand, real slow, and then you let it go all the way back out. Real slow, a pantomime of a stroke. There doesn't need to be a sound. You just need to know the muscles are engaging independently."

Exercise 3: Start by strumming in both directions with one finger, each individual finger a number of times. "When you strum like this and warm up for a minute or two this way, your body is going to feed blood to the lumbrical muscles and then to the flexor digitorum superficialis and then to the extensors, but not to the deep flexors. This means that if you start playing this way, the deep flexors are not warmed up and they're not going to be used. Subliminally, you won't want to use them. You'll think, 'That's not what I want to pull with, that's not ready.' One of the reasons flamenco guys can play fast is they strum a lot. It's very healthy for you, particularly, once you've plucked a note, you stop flexing as soon as the string escapes from you. The follow-through will happen automatically because you can only let go the tension in the muscles. It will fall in a certain distance depending on how much force you put into it. And as you stop, you relax. Gravity pulls this finger back up and also the extensors pull it back out, but they pull it back and passively. When you pull in, the extensors distend. When you stop pulling in, the extensors just

collapse on themselves. That means you can add to the recovery speed by having done a little bit of rasgueado, so that your extensors are in decent shape. Most of us have our extensors gradually atrophy because we don't use them. Or we use them in a tight, hard pattern of trying to hold fingers out that want to follow other fingers. You can heal some of the abuse of your extensors with real simply elemental, normal guitar motion."

Exercise 4: Try one finger at a time, and not continuous rolls. "Start with the fingers placed all the way to the heel of the hand. Do not clench them—that would involve the tips and thus the deep flexors. Don't curl them up. Then, rapidly extend the little finger across the strings, followed by the ring finger, the middle finger, and the index finger. Avoid continuous rolls because there's a habit people have in them to tighten up on the way back in, not realizing they are doing this."

A Digression on Nail Shaping

"You will see that what you need to do sometimes is shape your nail so that you get a broad surface on the string just before you relax with this angle. Your finger shouldn't hang up on the string, so you have to tighten up to get past it. One of the nice things about the guitar is that you can reshape the nail and make a good sound from whatever kind of usage the fingers really need. Most of us inherit an arbitrary nail shape and do anything to our fingers to get a good sound."

Working with the *a* Finger

This is a refinement on the second exercise, focusing on the ring finger.

"Place *p* on the 1st string. Try *a* slowly on the 3rd string. Hold it with its tip completely relaxed for a split second on the string. Be sure *m* is loose while you're doing this. Now, try this soft, slow pantomime stroke all the way to the heel of your hand and let go. There is a point at the very end of the stroke where this finger will pull because this skin pulls under here. Where you would be in trouble, for example, would be if this finger started to pull when you were still halfway through the stroke. So there's a point where that moves a little bit, there is none of that reflexive jerking we were talking about that people get. Most people can learn to do this. Make sure to concentrate also on coming in slowly, holding the finger a second on the string to check it, and let go and let it just plop like a dead fish. Get it close to the palm. Consciously will the *a* to go slowly. If you start to flex another finger in tandem with the *a*, I

want you to catch it in the middle of the stroke and turn it off. I want you to be able to control the speed of your stroke. The slower you stroke a string, the longer the tone sustains."

Working with the *m* Finger

"Now try the *m* finger. That's usually for most people the tricky one. See if you can get it to the string. Let the tip go completely. Hold it ready and then all the way to the heel as slow and soft as you can and let go. Now I could monitor if you're tightening up because the other finger would follow. But you're really good at holding the other finger away from following, so it's hard for me to tell. Only you know what you've done there. So, I want you not to tighten the tip of *m* and I want the other fingers just to stay loose. But you've got to let them follow. And then you're going to have to learn a new way to turn that off, not by holding yourself still. You don't repress that motion. You do something that doesn't cause it in the first place.

"So, gently pluck up slowly to the heel of your hand and let go. That's pretty good. As you play, they do tend to follow a little bit. [As I pluck *m*, *i* and *a* tend to follow.] See how far you can get—come off the instrument sometimes and think about this. Slowly move that finger and just try to touch the heel of the hand with *m*. And see how far you can get. There's a point where the other fingers have to follow it. If at any point the tip isn't loose, that's a problem. I could hold your tip hyperextended and I know that discourages your tightening of the flexor digitorum profundus. You can actually monitor it from the next finger."

Three More Exercises

Exercise 5: "Try this. Hold the tip joints of *i* and *a* hyperextended on the 1st string. Then begin a gentle, slow attempt to touch the heel of your hand with *m*. Great. That inhibits you from tightening the FDP. You could still tighten it while holding this. One could, but it's unlikely. Touch the heel with *m*. Go deep towards the heel. I'll let you give if you need to. You can teach yourself how far could I go. What might that stroke feel like? Leave *p* very loose. Don't go so violently or so fast that the other fingers have to move. So do this on the plane ride home. [As I do this with *m*, *a* wants to follow.] At some point I have to know whether that's just habit or a pattern you've trained in very deeply. Try it again. It seems OK. Pull it a bit farther. That's pretty good. I think it's just up here at the top joint. I don't think the tips were involved. Make

sure *ia* are collapsed, hyperextended, and keep the tip of *m* loose. This starts to unglue you."

Exercise 6: "Put *p* on the 1st string, and *i* and *a* as well. Just lean them in gently, just so the tip joints relax. Now put *m* on the 3rd string and pluck that same free stroke slowly. You've got a fail-safe mechanism there. If you've turned off either one of those, you can hardly tighten *m*. You don't really want to do that. There's a terrible inhibition against it, because something in your body knows that if you tighten one tip, the other tips are going to want to follow. So all you need to do is to break that cycle. Remember, *i* and *a* must be hyperextended."

Exercise 7: "Now put *p*, *m*, and *a* on the 1st string and try on the 3rd, as before. Probably you haven't hurt yourself real, real bad, irreparably; because there's a certain sanity in there and a certain system you were listening to. The macho 'no pain no gain' approach, where you can repress your actual physical feelings, can get you in a lot of trouble."

Playing a *pimi* Arpeggio

"Play a *pimi* arpeggio as slowly as you can. Start with a rest stroke on *p*. Stop. Immediately I asked for the rest stroke, your knuckles went out over the trebles. This loose free stroke is now possible, which means I'm asking you to do a lot of things from basically a hand position farther out. Try playing *i* with a soft tip and then letting it go, and then *m* with a soft tip and let it go, and then *i* again.

"Watch for when you're hovering in the air near the string. Ask whether you're hovering with your tips or are you hovering with something else. If I have to do that, to stay in the vicinity to get ready for the next fast arpeggio, I do it from the middle joint. I have an angle bend in my finger. My finger at that point does not necessarily look rounded, which might look more natural in a certain sense, but I can see that what I would be doing is keeping my basic position from the tips, in that case, which you don't want to do. So eventually you'll get this angle look.

"Let each finger return ridiculously to rest, in the first stages. The thumb stays on the string. Let the other fingers fall all the way loose, so it's like the exercise we started with. You have to find a way to select the string you want without locating it from the tip of the finger. If you do, the other finger will follow. So you have to find a way to get to the string without using the tip joint, only the mid joint.

"It's not what's happening when you stroke, it's what's happening in between strokes that is important. It's when you're not supposed to be doing anything that you're doing something. It's not how you're doing

what you're doing; it's how you're not doing what you're not doing.

"Here's another exercise to help. Put your thumb on the 3rd string and the middle on the 2nd. Stroke in a little deeper than you expect and then let it all the way out. The tip relaxes all the way. You stroke in all the way to the heel. That's your practice stroke for now."

Use of *m* and *a* in Classical and Baroque

Pat noted that a lot of practice with this combination makes a lot of trouble. He said there's a way to do this pattern without using the ring finger. [Pat plays an arpeggio *p* on 6th, *i* on 3rd, *m* on 2nd, *i* on 3rd, and *m* on 1st: *pimimimi*.] "This is a 19th-century approach. There are double *m* arpeggios. There are double *p* arpeggios where it comes down where we don't expect it. We all try to do this with the ring finger and with a lot of strain."

[Pat demonstrates the pattern from the Sor-Segovia study number 17, but not as Segovia does it: *ppimpimpimpi*.] "There is no use of a ring finger. There are some rest strokes with the thumb. Sor would never use the ring finger on the first with a rest stroke. So, we have a deep, resonant rest stroke on the bass, followed by soft strokes with thumb and index. Then we have the longer middle finger providing a naturally louder sound on the trebles, emphasizing the upper melody.

"See Sor's method and Brian Jeffery's article. We need a rethinking of Sor's études.

"You could do it the Segovia way, but it's simply hard. This Segovia way works great for Tarrega, since it's the Tarrega way. It works great for certain periods. But it happens to be just one way of playing. Once you apply it to music of other periods, including baroque, you get yourself in a lot of trouble.

"If you're very good at doing things the way Sor and Giuliani did them, with probably no rest strokes in treble and with them in the bass, and sticking to three fingers as much as possible, and the ring only when you really need it, then you'll be playing the music of that period correctly.

"The baroque lute usually plays basses with rest strokes and free strokes in the treble with mostly the index and middle. It tends to use the strong finger, *m*, on the strong beats and the weak finger, *i*, on the weak beats, whenever it can. Not to be compulsive, but as closely as you can."

[Pat plays the sixth Sor-Segovia étude, using *p*, *i*, and *m*.] "It's like a flute and cello duet. There are several thumb strokes in a row. It sounds nice and orchestral. [Then he plays the third étude using only thumb, index, and middle.] This works great on a 19th-century guitar or a light modern guitar."

Impact on Guitar Building

For all its supposed radicalism, Pat observed, Tom Humphrey's new Millennium guitar is very light in body. There's a gradual return to lighter bodies, smaller string lengths. Necks are becoming shorter; fingerboards are changing to make it easier to play. There's a retreat from massive, heavy instruments. These traditional techniques will be viable on the new lighter guitars, these really sensible techniques.

Pat concluded his comments on the value of using 19th-century right-hand approaches: "This is not only of historical or stylistic value, but the traditional techniques also have an anatomical and pedagogical value. I use early 19th-century methods in my teaching. Sor and Carulli played with the little finger on top—it puts you in a good hand position."

Pat's Summing up of My First Lesson

Pat concluded this truly revelatory lesson with a brief summing up of what I needed to begin doing once I returned home to Toronto. He had firm views about what I was doing wrong, but couched them in a kind way, and told me there was a light at the end of the tunnel. He reiterated that "What you need right now is to turn the tip joint down to zero for a while." Maybe in future I could add some firmness, but for the time being "it's gotten out of control." I was to look for each finger to be totally loose at the tip, and falling loose before I used another finger. This phase was not meant to last forever: "Eventually there will be a time when you get the next finger ready while the first one is falling loose, but you have first to take it apart." The key is to work very slowly, and, in any case, he noted, "You don't necessarily pluck in fast, but you always let go fast." He told me I should have a variable speed pluck and a single speed release.

He emphasized that "What you must do to reteach yourself is to do everything in slow motion so you can see whether there's a tightening within a stroke. Watch your middle finger and make sure it always stays loose."

I headed back home with a sense of hope, but a realization that it would take a great deal of slow, careful work. If this first lesson was primarily theoretical—I did very little playing— the second was literally hands-on.

LESSON 2

Three months later, in the summer of 1989, I once again flew from Toronto to New York to have a second session with Pat. In the interim, armed with my new understanding of the mechanics of finger movements and a handful (pun intended) of exercises to begin my re-training, I diligently worked every day, gently and with deliberation, on the work Pat had given me. I stopped playing any repertoire, as Pat had said that I had come to associate that repertoire with the dysfunctional finger movements.

Notwithstanding this injunction, Pat had asked me to play a work from my repertoire so that he could analyze in depth exactly what I was doing. I had "prepared" my arrangement of Bach's first Cello Suite. As I played the prelude, Pat began to watch very closely. He would slowly walk around me, occasionally hovering when something in particular struck him. After the prelude, he told me that I needn't continue with the other movements—he had gained a clear understanding of my situation from that piece alone.

Pat's General Observations of My Playing

He had many observations, not all of which were directly focused on my dystonia. I had noticed Pat was given to hyperbole. For example, he exclaimed, "If I catalogued the technical things I see that could be fixed I'd be up to the hundreds by now. Someone has criminally let you do most of the things that are the hard way to do things. You're doing them as well as you can. You're doing them quite responsibly and well, but in each case it's the hard way. Just a million things to fiddle with. Which is a hopeful thing in the sense that I can see lots of little glitches that some of this probably could have come from. You could improve so fast and so easily it would make your head spin."

He talked about everything from how I planted my feet on the floor to the position and angle at which I held the guitar, to the twist of my body to the left. None of my teachers had ever discussed any of these basics with me, and, to my discredit, despite all my years of study and playing, I had never analyzed my physical approach to the instrument. I simply worked on music and did the usual technical exercises and études. I subsequently completely changed all of these elements, and my playing became much more natural.

After this preliminary overview of my physical approach to playing, Pat turned his attention to my focal dystonia. He had noticed the

middle finger starting to extend around bar 12 and continue its wayward movements through to the end. He asked me to go back to the beginning of the prelude and play it again, observing, "The most significant thing obviously—I wish I could teach you every week for two months and get all of this crap lined up, because you could get everything else going real well—it wouldn't matter a damn if we can't get this thing going in the right hand. So the real important issue in the right hand is why that middle finger kicks out."

Zooming in on My Index Finger Free-stroke Release

"Play the first measure terribly slowly." I play.

"I'm watching something really important in the cycle of your index finger stroke. Countless times as you played through the piece, you got to the string in good shape, you let go the tip, and you either plucked straight up in the air from the tip or, more commonly, you plucked through pretty well with very little tension in the tip, and then you held the finger up here bent until you were ready to use it again. So, in other words, as the middle finger played afterward, the index was held up here bent somewhat. At its worst, there were moments when you had a phrase that culminated in one solo middle finger; your index finger was held in as you played it, nowhere near loose. It was two inches from where it should be, not just up in the air, but way back in there. As the problem progressed, in the course of playing, the index finger seemed gradually to get worse, this holding in. The kicking out of the middle finger reached its worst somewhere in the middle of the piece, perhaps because of the musical configuration there."

Pat's observation was crucially important, and marked the beginning of my recovery. No one had ever actually watched what my fingers were doing. The crux of the problem lay neither in the middle finger, nor in the stroke of the index finger, but in what my index finger was doing *after* plucking the string.

"Here's a theory. The holding in of your index finger automatically puts a little tension in your middle finger. The extra pull outward that you've been putting into your middle finger for a long time was to some extent perhaps to compensate for the fact that at the moment you were recycling it, it was wanting to stay inward because the index and possibly the ring were cocked at that moment. Your ring goes in, but I think it goes in from the middle joint, which is safe. I don't think it's hooked at the tip. The index does get hooked at the tip not as you play, but as you're idle after you play. You don't relax it and leave it relaxed. It doesn't bounce back by itself, you have to relax it."

This was exactly what Bill Kanengiser had observed, but Pat had seen the connection between the index and middle finger movements. Then he gave me some very targeted advice which I have religiously followed ever since.

"For now, I'd like you to play that measure terribly slowly and overdo the relaxation. That means this: do not relax and aim back at the string in question. Relax and let the finger fall outward completely. Just let it go and see what we see and what we feel. See if you can do this trick all the way through the piece. Most of the bass notes should be rest strokes, especially the 6th string. Let the index go all the way out. Don't aim it at the string, go out all the way. Be absolutely careless of where it has to be next.

"I think the muscles you use to aim it at the new string are not in the middle of the finger or at the base, but at the tip. I think you're accustomed to aiming or holding it in the vicinity as a guitarist will, preparing it for its next use. And you're using the tip, which means you're using the flexor digitorum profundus. And that's having an effect on the middle, requiring you to make an extra effort to pull the middle out.

"Now here's a thing to test. Were you to play the piece experimentally that way all the way through, letting every index completely flop loose to wherever the bottom of its stroke is, would you in fact find less of this pulling out of the middle finger?"

I play through part of the prelude again, Pat watching my right hand like a hawk. "What I saw right now for a few bars looked very good. I can't say where that would go over the course of time."

Looking back as I review that lesson, I am still amazed by the directness with which Pat had diagnosed the root cause of my focal dystonia. There was much more, of course, but this one insight changed everything for me.

My Nervous Quick Free Stroke

Pat next turned his attention to the manner in which I was actually plucking the strings using free strokes.

"You have a nervous quick stroke. You don't need to pluck anywhere near that fast in normal playing. Were you to stroke more slowly, your sound would sustain more. You tend to hit the string and not really stroke it. In normal playing you should stroke more slowly. The rule is, 'in slow, out fast.'"

More sage advice, which I have followed ever since. But as I played, my well-learned dysfunction continued.

Role of Top Knuckle and Middle Knuckle in Stroking

"The very first stroke you made, at its end, it cocked using the tip joint. Now, if you could aim at that string not with the tip joint curving but with an angle, with the mid joint angled, indicating that the tip was loose, that would make a tremendous difference in the interaction from finger to finger."

Again, this was simple, but profound. I hadn't realized that the actual stroke began with the top knuckle (MCP) joint bringing the finger to the string, and then the middle knuckle (PIP) joint actually doing the plucking. At speed, it looked as if both the top and mid joints were simultaneously involved. It was not a matter of "collapsing" the tip joint, which some have accused Pat of advocating, but of not having it actively flex in making the stroke, and, in my case, of letting the tip relax completely after the stroke. Pat went on to differentiate between the various phases of the stroke.

He had explored my follow-through after the stroke, and he had delved into the nature of the stroke itself. He next went into the matter of the preparation of the stroke.

Preparation of the Free Stroke

"There is a way you could aim at an inner string being prepared in an arpeggio that is acceptable. Curiously, this is one of those things where it's not how you're stroking the string; it's what you're doing in between the strokes. It's not part of your playing per se. That means that this particular problem, which may be part of this whole thing, it may be the most important part, we couldn't tell, in hindsight we'd know—if we could get rid of this problem, the first stage would be getting used to relaxing completely in between strokes.

"The next stage would be some way of learning how to get to the string without that tension in the tip. You have to be really careful as you do this not to move the tip at all. Don't aim at the string, don't think about a string.

"It's like the alchemist's formula that you can change boiling water into gold if you don't think of an elephant: as soon as you say that, obviously anyone thinks of an elephant." As he made this analogy, Pat was manipulating my index finger. "You wanted to control that finger somewhere. And you have to feel that that control comes from somewhere else, not the tip. There was a moment when you didn't want that to happen. I'm talking about learning to pull the finger without tightening

the tip. The key is being able to come to the string without ever having to hook the tip on the way."

I noted to Pat that when I made a free stroke as he described, there was a physical sensation of the flexed middle knuckle joint popping back to a zero tension position when the flexion is released. I didn't have to consciously think about bringing the finger back. His response: "I think you may be describing something which is really important. Both segments of the finger tend to fall loose with a thud. There's a definite feeling of both of them going ker-chunk at the bottom. You have a tendency, as you release, to hold on to the end of it with the tip. Rather than going completely out, you're holding a little extra. You were definitely doing that in that piece, and that's definitely an important part of the interaction between index and middle fingers."

Analyzing the Whole Free-stroke Cycle

"Let's see what happens when you play index and middle on the 2nd string repeatedly. Select the string you're going to play from the middle joint of the finger with no tension in the tip. You're pretty good at that part of it. Allow the tip to relax as you build up force into the string. Press the string down a little bit toward your body, toward your belly, and pluck.

"And then let it go completely. Fine. Now, have you let go completely?" Not quite. "You may have let go completely, and then decided well, I'd better stay there. That's the crucial moment for us. You may be letting go on these strokes, but you let go and then you go like that [he demonstrates me aiming with a hooked tip]. Do you come from the follow-through into the hand to the hook, or do you come from there to there and then hook in preparation? I'm not sure."

I ask Pat how I can tell whether the tip is relaxed in a "flex position" in the air, or if I am actively flexing it after and before the stroke.

"That slight flexing of a completely relaxed finger is hard to tell from a deliberate hooking of the tip joint. The difference between those two is crucial. You have to look into that slight flexing very critically and find out exactly what 'slight flexing' is."

An Experiment in Tip Relaxation

"Put your index on the 1st string and gently let its tip relax into the string. Very, very gently, with almost no pressure on the string. Now just leave it there. Now I want you to reach to the 2nd string with your

middle finger and pluck it with a free stroke. Let it go completely to total rest every time you do. Don't hold it aimed at the 2nd string. Just let it go. Try that a few times. When you're actually plucking the middle finger in the piece, I want, at that moment, the tip segment of your index finger completely relaxed.

"This is about the only way I can be sure that it is. You can be sure from inside your body if you listen carefully to what your body is telling you. I have to see it from the outside. So I can fix it like this, and say there is something about this disengagement of the tip that is useful to you.

"It's an interesting thought—disengaging the deep flexor muscle. Do that with your ring finger as well on the 1st string. Put both the index and the ring. Just pluck free.

"Sometimes, by this kind of procedure, you can develop literally a biofeedback exercise of a kind that tells you, 'This is what it feels like.'

"Now here's the problem. Pluck and relax all the way with your middle finger. My contention now is that you can't tell the difference between those little bits of tension. As you come in to select the 2nd string with your middle, I'm going to ask you to do something kind of weird. Let your middle come out quite far, let it relax completely. It should be in front of the 1st string as the index and ring are resting on the string. You have the next task to achieve, which is to select the 2nd string. That's pretty tricky, inside the other fingers.

"Here's what I want you to do. See if you can select the 2nd string without ever flexing the tip of your finger. I think that when you are purportedly at rest between strokes, you're often holding a good deal of tension at that moment, and that's an interesting moment to figure out.

"I had you hold your index finger on the string for quite a while. I want you to see if you can use that gesture, from the middle joint, to get to the 2nd string with the index. Bend from the middle joint and not from the tip. Not bad. Pluck gently from the middle joint. Make a pantomime of a pluck. Now try the same thing, but when you finish plucking, hold your finger in for a few seconds while I tell you what to do. Look at your finger shape. I want you to relax it just enough that it comes back and aims toward the string you're going to play. That looks good. That looks like an angle, not a curve in the tip. How much curve in the tip—there's a minute amount at rest—how much is natural. If you have enough tension to feel a side effect anywhere else, that's too much. This is damned tricky to learn. How are we going to develop a way to do that? You have to do that individually with every separate person, but that's the moment."

Preparation Aiming with the Middle Joint

Pat asks me to play the first measure of the prelude again.

"This time I want you to go half the speed you went before. Assume you had spent a week just letting go all the way with the index.

"Now, what would be an acceptable way to aim for the 3rd string, which essentially you will do in time. You won't let the finger go all way out every time when you're actually playing. You will keep it in readiness. Yes, it has to be a way that does not interact with the middle finger. OK. Try."

I play, incredibly slowly.

"Play and don't let the index all the way out, keep it at the 3rd string in an acceptable way, and keep it there as you pluck. Most of that aiming has to be done through the middle joint. That's the danger spot for you. That's the one I was seeing during that rendition of this piece.

"If you played it 10 times I might see 10 different things, but that's a real important one and it's common. One of the hand positions you played in over the years may have been low enough or far enough to the bass that you had to do a lot of tip hooking to get to the strings, and you developed a habit that now is a part of two or three technical systems ago, but is stuck somewhere in the middle of the one you are using now which, to the best efforts of the most reliable teacher you could locate, can't quite be cured because it's a vestigial remnant of an earlier state of evolution.

"How we're going to get rid of that—we have to develop—it would drive me crazy to practice it in a piece of music. I would have to find it out in a piece of music and then take it aside somewhere and warm up on it in an exercise so that it worked well."

A Digression on Playing with Great Tension

"I have wrestled with this for so many years and I have seen so much dumb thinking, arbitrary dumb-headed guitar-playing nonsense that hurts so many people that I'm furious about it.

"I feel like I'm a tent show preacher getting down on the floor to wrestle with the devil. I've seen some of the best young players, some of the people who cared the most, worked the hardest, were most intense about playing the music, and therefore translated that tension into their playing. On the other hand, I've seen some of the dumbest, lumpen, dullest players do fairly well because they didn't care enough to hurt themselves.

"They were all taught badly, but the guys who didn't care very much didn't hurt themselves. The real passionate people hurt themselves the worst. I could spit nails. Every once in a while, when they want something bizarre, they come and invite me to speak at the GFA [Guitar Foundation of America] or something like that, and I get up and tell them they're nuts. They like to invite a resident weirdo in now and then. When I lectured in Akron last September, the opening line of my lecture was, 'You hurt so much because you play so ugly.' That is to say, you usually get this question about technique from somebody who just pounds the shit out of everything he plays. But the problem is, from that aggressive school of playing trickles down ideas that just screw up everybody, no matter where they come from, no matter what their nature is in terms of playing."

Relaxed Release and Preparation

After Pat's passionate outburst, he returned to the problem at hand: how to position a finger after the release in preparation for the next stroke.

"Once you can do this stroke right, you have to think, 'Now, what happens when I use it in context? What happens as I move from finger to finger, rather than just one finger at a time?' That is a damned difficult thing to do.

"I began last time showing you a very preliminary exercise which you can see has part of this effect about it. When I asked you to put your thumb on the 1st string and reach inside with the others, I was asking you in effect to select the string with the middle joint of your finger. So, coming in, you're doing pretty well with getting to the string and plucking it without that tension.

"Now I want you to do that same exercise, but now don't let the finger all the way out. Let it fall back only to where it aims at that string again. Freeze there. You're the only one who knows what tension is in that joint in the tip right now. Are you doing it from the tip or from the middle joint? Or are you doing a combination? Sometimes I will see extreme tension in the tip because the middle finger on the outside will curl up. But you're the one who knows.

"So I'm over here on this side of the room saying I don't know how it feels inside your body. You are the one who has to figure this one out. Pluck again. Then let go in this specially selected letting-go way. What I asked you to do was let go everything in the tip of your finger, which of course you didn't have to let go because you never tightened up in the first place.

"But I asked you to let go part of the way with the other two joints, and then hold part of the way out with those other two joints. That is a pain in the butt. Now, stay there. Come in with your middle finger the same way. Pluck the 3rd string keeping the index aimed at the 3rd string, not on it. Watch the tip of your index. It must never tighten up as you do this. It's got to stay loose as you play the other finger. There's a thing there, if you had to play index-middle alternation, or if you had to play an arpeggio, they've got to work independently."

The White and Pink Test

"Put your thumb on the 1st string. Let's see what we've learned here. Let the other fingers go. OK. There was a trick right now. Just for a minute I'll make mention of it.

"As you came to the strings, you went like this [he demonstrates by hooking the tips] and you had to let go before you began. In other words, as you aimed at the string, you already had the tips bend.

"Now watch. Aim at the string and bend the middle joints and you're OK. If you bend just from the middle, you're fine. But if I see this pink flesh at the tip joint turn to white, you're in trouble. I sometimes do this with people. I draw a circle on their finger and I say, 'No white in that circle.' Never any white in that circle, not when you're selecting the string, not when you play it, not when you follow through, not when you release. Never!'"

A Digression on Grabbing Things in Life

"Never flex the tip joints. One grabs things deep in the palm of one's hand. It's not a more secure grip when you tighten the tips. In martial arts, you are never taught to tighten them, in stick fighting, for example. Weight lifters also are taught to relax their tips. Women guitarists with tendinitis have cracked a glass while washing dishes: they hook the tips.

"It's interesting to observe yourself as that happens day in and day out. I trained myself on the guitar so carefully to let that go because it was the source of my horrendous tendinitis. It wasn't just dysfunction for me. It was pain. In other words, not just something that misfired, it hurt. And it hurt all the time. Twenty-four hours a day for a couple of years. Even if I stopped playing, it still hurt.

"Whenever you practice anything on an instrument to a certain degree, it will come to be part of your body language in the rest of what

you do. If you understand what I'm telling you now profoundly enough and change it in other things that you do during the day, it leads back in, it aids and abets this thing you're trying to do.

"I won't tighten up the tip of a finger for nothing, man! I don't know how hard you'd have to push me to get me to go like that. The tips should be a third, spare, backup emergency system you only use in rare situations and then very briefly, not to hold weight, but to articulate."

A Pause, Where I Summarize Pat's Advice

By this point in the lesson, Pat had noted several crucial elements pertaining to every stage of the free stroke. To make sure I had understood correctly, I went over his suggestions. In the return phase of the free stroke, I should arrest the return to just in front of the string to be played next, but only use the middle and MCP joints to do this. Pat nodded in agreement. I went on: "When I first play a free stroke, I should let it go back all the way to establish relaxation of the tip joints." "Yes," he said. When that is established, I should let the finger return only as far as just in front of the string. Again, Pat affirmed my understanding.

"You will in time develop, naturally, the need to arrest the relaxation in midstream to keep your finger close to the string where it's going to be used again.

"That has to happen in an arpeggio. That has to happen in a lot of other situations. You simply have to define how you do that task in a different way. If you could sort out that task, I think you wouldn't have to wrench the middle finger loose from the index when it needs to be used, or just after it's plucked. If your index finger was loose in the tip, then there wouldn't be the same thing holding the middle inward sympathetically. This could be the key.

"As to the free fall return and arrested stop before the string, that I envision as a fairly advanced technique. I don't ask someone who has this kind of a problem to do that right away. He has to learn to relax first. And then he has to define a very selective partial relaxation."

The Importance of a Big Sound

Volume is important, Pat insisted. And the way to achieve it is to make sure the stroke pushes the string downward so that the top vibrates up and down.

"Your job, once the tip relaxes a little bit, your job is to press the string downward, not sideways. I want you to press it in quite a bit and then pluck. If you find you can't clear the next string, your knuckle isn't in the right place. Just move your knuckles down more towards the treble. Press in deep and pluck.

"For now, when I want you to go powerfully, revert to letting the finger go completely loose at the end of the stroke.

"You need to select a nail shape that works better when you do this that doesn't hook at that moment. When you get to the string, press in deeper and make a much louder sound. Be real careful as you build up pressure into the string to remember that you want to follow through like a strum as though you were going all the way in to the center of your hand. Be careful, therefore, not to lean one way or another onto the corner of the nail as you play. Just follow through deep.

"If you find that didn't work, adjust the nail shape so that it did work, rather than feeling you had to twist to get off the nail. Watch for white in the circle at all times. This is what I'm looking for now, a big sound, for a lot of reasons. Among other things, if you make a bit fuller push, you feel what's going on more. In other words, the sensation is more poignant.

"You can feel more about where the energy flows if you're a little more emphatic. I'm not talking giant volume. I just want you to trust yourself and lean in a little more. Go for a little bit bigger sound so you're really sure of what you're feeling. Play slow, loud, and free.

"Use your middle finger the same way, with power. A hallmark of this going well is that this will be increasingly loose in the ring finger. Press in quite a bit. When you pluck from a loud stroke, let it flip in as far as it wants. Don't try to hold it back.

"If you do try to hold it back, after the powerful lean in, the only way to hold it back is to tighten the tip. You do eventually let it flip in as deep as it wants, and it will want to go very deep after a powerful grip, and then you stop it on its way out in the way we've talked about. You arrest it after it's completed its loose follow-through. The harder you press into the string, the louder it will be. Don't limit the follow-through of a loud note. Use the ring finger in the same way."

Positioning All the Fingers

"Have a position that accommodates all of the fingers, a compromise position that works for everything. Often, at this stage, whenever I get a new definition of a certain thing I want, I will ask you to play *imia* or some such alternation pattern.

"The idea behind those is to get a position of the hand which is compatible for all fingers. In other words, so I don't go *imim* for half an hour and then discover I have to go to a different place to get *ia*—I don't think that's productive. You have to find a system where all your wheels make a three-point landing, it is possible.

"It's not always possible with all instruments, but here I think it's essential in the 20th century. Maybe it wasn't necessary for Sor because he didn't use the ring finger much. Maybe it's also not so essential for Tarrega because he almost always used the ring finger in a rest stroke. But there are times in an arpeggio where your ring finger has just got to be available right away and you've got to go rolling right back to the other fingers and you've got no time to change your orientation. There must, then, be a way to develop that facility.

"Sometimes, in later points, when people are solid, I will go on to some other idea and I'll have them play *aiam*. In other words, begin with whatever position the ring finger needs, it being, in a sense, the finger at a disadvantage, and then work back from there and see if you can play the other fingers, which are pretty strong and pretty flexible in a position that accommodates the ring."

Importance of Rest Strokes for Developing Free Strokes

"I want you to start practicing with rest strokes, pressing in quite deeply, and then play the free strokes afterwards. If you aim to begin a scale with your 2nd finger and your hand is in a bad position, your index cannot reach the string.

"It is more customary, in better technique, to aim so that you know the index is comfortable on the string. You need to focus on where the index is when you are playing with the middle finger. You don't want it out from the string. The index should not have to stretch or lean. It should not be working hard.

"The same way should be used to accommodate the ring finger and adapt a method where the other fingers play in the position which favors a real good stroke for the ring. In other words, decide where the weaker finger should be and then adapt the stronger fingers to accommodate it.

"Rest and free strokes are basically the same, the only difference being the wrist position. The selection process we did such a long thing about is specifically something that has to be worked out in free strokes much more than in rest strokes and it is more sophisticated.

"That's why one's practice usually starts with the primal, simple rest stroke and afterwards you go into the free strokes. And again, from the

place where you relax, the key, perhaps, for you, is to begin the selection process from the middle joint before you use any of the top knuckle joint. To get to the 3rd string, you come in with the middle joint and then you go into the stroke with the knuckle, the metacarpal joint. When you do that slowly, you're monitoring the whiteness in the circle around the tip joint."

Reflections on His Work with Guitarists

Pat mentioned that he was working with a guitarist whose right-hand technique had been compromised to the extent he had to stop playing. His problem was similar to mine. He had come back to the guitar, working with Pat every month, seeing good results. The guitarist was seeing a neurologist in Braintree, Massachusetts, an amateur blues guitarist and finger-picker, who asked Pat about his work with guitarists.

"This guy asks me what did you do, how did you do this, how does it work, and I say I don't really know how it works. I know that I'm looking at a chain of events and that my little handle by which I maneuver this, my point of leverage, is this particular kind of thing. But I do not know what caused it.

"I do not know what caused your problem, but this little thing I'm teaching you to do was always present and a little too tense in your playing. So by making this better, maybe the other thing [the dystonia] goes away, whatever it was. There are many factors in any particular physical action, and sometimes if you take 20 different things that you move to make a gesture, if you make any three or four of them supremely efficient, all the others loosen up in a big bunch. The bundle lets go. And there's no one who could tell you exactly which three you had to sort out, or why you went over the edge into a problem, because it could be any one of so many different things. Intuitively, you kind of know things about tension in your body, and you can discover things accidentally."

On Firmness in the Tip Joints

As I mentioned earlier, a number of commentators on Pat's teaching approach oversimplified greatly when they claimed he always insisted that the tip joints "collapse," a term with rather negative connotations. My experience working with Pat was that his approach was far more nuanced.

I asked him to demonstrate rapid *pimami* arpeggios for me, just to observe how his fingers were working. He did so, slowly at first, gradually building up tempo. And then he stopped.

"I have an inhibition about moving the tips of my fingers, which means that I won't play fast and loud unless I'm warmed up. It would take me a few minutes to be able to do this at any kind of limit of speed, and in fact, I haven't practiced arpeggios like this in years. I could play you recordings where I play them fast—you'd have to believe me that I wasn't using the tips to do it.

"For most players, at very high speed, there is actually a little bit of stiffness in the tips, and I think it's perhaps always tolerable in certain situations once you've learned to control it really well."

He proceeded to turn the situation into a teaching moment. He asked me to watch him do this arpeggio pattern.

"Watch from the side here. Watch my index finger. I see a little bit of involuntary motion, some little things going on in there. If that's happening, I know I can't really go as fast and powerfully as I want. I know that I'm really out of whack somewhere and that I'd have to warm up a few minutes to do it. But normally you try and stay somewhere near the string and you're watching me aim and seeing a little extra stuff in there. When I play at my best, it stays really still, and at that point I can go real quickly. When you play the lute you hardly ever play arpeggios. Or you do them like *pimiaimi*. You don't do four-finger arpeggios all that often. Watch my middle. My middle at rest is curved quite a bit. That's rest. I found a moment ago that I wasn't quite letting go enough. I know once I warm up that's one of the things that works out well. I let go a little bit more."

In the years since that moment, I have come to realize the validity of what Pat was saying. If I try to play without carefully warming up, the dystonia comes back. You can't unlearn what has been learned. But you can create a new set of neural pathways that can be superimposed. The purpose of warming up properly is to activate that new set of reflexes. Like Pat, I find that velocity and power come only after careful preparation. And some days are better than others. Since I do not perform on a regular basis, this is not a cause for concern, but simply something to observe. A concert artist of course has variability, but in his or her case, there must be a very high baseline that they can count on.

"Theoretically, at some time in building velocity, two things would happen if a person had a fingertip joint that didn't extend as much. He might be able to engage that finger loosely, quicker. You would reach that limit on up to where you were playing 16th notes at 180 and he could play them at 190. The increase in speed would be a hardly useable musical thing, but it might be there somewhere at the top end.

"And one other thing, which is this: his nail would depart from the string when the finger was fairly straight and a little less relaxed, and that means his tone on that note when he played that high-speed arpeggio, his top note would be a little more shrill than yours, or he would have to make his nail straighter across. In other words, he would have a gentler curve rather than more of an arch. He would have to adapt some way to get a good tone out of that finger. People whose fingers stop straight tend to have a pretty shrill steely tone, all other things being equal, and they never are. Those people will tend not to be able to get a real nice sound out of a free stroke at high speed and will tend to always use rest strokes in that situation. In other words, they will adapt in some other way to make that work. So there are pluses and minuses to any one of these factors. Your fingers, in general, as I watch them, do not relax outrageously far back. Many fingers go a lot further than that."

On the Relative Value of Speed

"Remember, you don't really need speed, recyclable speed, out of your ring finger. You do most of the speed playing with the thumb, index, and middle. If you play a fast arpeggio, the ring gets played once, and the result is that you don't really need to play *amamama* real fast. Somebody whose fingers don't push out much, who don't hyperextend much, might be able to play faster with middle and ring. I've seen it lull people into a sense of security that came up and hit them later when they pushed that technique rather arrogantly too far.

"I saw someone as a party trick play a very fast piece with *m* and *a* because he had broken his *i* nail. He was actually showing off at a guitar event, and he'd actually practiced this rather furiously and knew he could do it pretty well. He pushed it real hard, and I talked to him a week afterward and he had such pain in his hand he couldn't believe it. He played "El Colibri" or something like that really fast, and of course all of the people in the crowd were blown away by the chops this person had. They didn't care about the downside, they didn't see the downside.

"If you lost speed, if it's true that you actually lost speed that way, by letting the tip go, and you happened to have a finger that hyperextended, that is a thing you would have to live with. The point is that when you're playing with these two fingers really independently, simply, you'll time it so that you begin the approach with this finger a little sooner. The only time you would reach a flat-out top speed would be if you were playing *aaaa* as fast as you could repeatedly. As long as there's another finger in between, you're basically not going to get into that area. In theory it seems

important, but in the end it tends not to be.

"If you looked at the recycling of my fingers, and exactly when I begin the inward stroke with one finger while the other one is falling loose, I begin that inward stroke if my finger relaxes a lot, probably a little sooner than someone whose finger does not relax a lot [i. e., hyperextend a lot]. In other words, my timing is a little different. It doesn't matter at all as long as I've worked it out that the two independent systems operate independently next to one another and so that there's nothing that recycles between those two like the profundus muscle.

"There is a difference in how anyone's stroke works that way. That has much to do with, for instance, species. Different animals have different patterns of, say, gathering their feet as they run. There are individual differences in executing physical movements. That's why a teacher should not try to have a student imitate exactly what they are doing.

"Some people can remember the physical sensation of a particular movement very keenly and can, as a result, reproduce it any time they like. For instance, if they play a certain passage in a very fluid manner, they can recreate that whenever they like, because they are able to remember precisely what it felt like. In contrast, the rest of us have difficulty in calling back a physical sensation."

Afterward

Once again, after this session with Pat my mind was overflowing with ideas. It would take time to process everything, to fully understand and absorb everything Pat had told me. Because I was beginning a new career as a high school teacher, my time for practice was limited. In retrospect, this was a very good thing, because it was not possible to overdo my retraining. As Pat repeatedly insisted, the road back had to be taken gently and patiently.

I began to turn Pat's suggestions into practice procedures, inventing my own exercises based on his recommendations. I made no effort at playing any pieces, but focused wholly on implementing his ideas on how to best move my fingers and joints. Above all, I was determined to work so slowly that the dystonia would not show itself, and to only increase tempo extremely gradually.

I began taking notes on my practice sessions to help guide me. I gave myself reminders: "Always ensure a high level of success at any point; establish a base point where success is guaranteed; always work slowly enough to allow complete conscious control of movements until correct reflexes are firmly established."

I explored the various possibilities of tip joint firmness and extension: hyperextension, more firmness, variable degrees of flexibility. I followed Pat's advice to begin with absolute relaxation in the tip joints. This was natural in rest strokes—and I did a great deal of work with apoyando on single strings and crossing strings, focusing on relaxation and the four stages of the rest stroke—approach to the string, downward pressure, release and rest on next string, and return.

I gradually reintroduced music—mostly selected passages from pieces to use for retraining. One cannot live on pure exercises forever! Eventually I began to learn new repertoire, but took my time, carefully working out fingers for both hands that suited me musically and physically. I practiced slowly, watching my right-hand fingers like a hawk, making sure I followed the principles taught me by Pat.

I spent a great deal of time with free-stroke alternation, using the proximal interphalangeal joint controlled by the flexor digitorum superficialis to aim at the string. I made sure the flexor digitorum profundus controlling the distal (tip joint) was not activated by concentrating on the muscles controlling the middle knuckle and the upper knuckle. At first I let each finger pluck and return before starting the next finger. Then I began timing the return of a finger after a stroke with the movement to the string of the next finger. I experimented with "staccato planting." I graduated to such études as Carcassi No. 14. Slowly but surely I noticed definite progress.

I also worked extensively with arpeggio patterns, beginning with simple ones like *pim*, *pma*, *pia*, and moving to *pimi*, *pmam*, and *piai*. I used 19th-century studies by Carcassi and Aguado, and Pujol's "El Abejorro." I tried Yepes' *piam* pattern as a replacement for *pimi* and found it worked beautifully.

In January 1990 I went to the Canadian Centre for Performing Arts Medicine in Hamilton, Ontario, and was officially diagnosed with focal dystonia. I was given a binder full of medical articles all basically saying they didn't have a clue how to resolve dystonias. I learned about how the careers of pianists Leon Fleisher and Gary Graffman were cut short by focal dystonia. I had a complete neurological examination that revealed absolutely everything was normal. One of the doctors suggested I try injections of botulinum toxin to paralyze my middle extensor. I recoiled at the prospect.

I continued to work gently and quietly on the complete right-hand-retraining program Pat had outlined for me. In October 1990 I returned to the CCPA for a follow-up. To the utter amazement of Doctor Chong, the director of the centre and himself a former pianist, he

observed that my dystonia had vanished. Quoting from his report: "Mr. Silver has made significant inroads in his road to recovery in dealing with his right hand focal dystonia. He has successfully applied a number of relaxation techniques including not using his extensor digitorum muscles excessively. He is now beginning to do simple hand manoeuvers and is increasing the complexity of his right hand's movements. He is making excellent progress."

He suggested that I set up a guitar workshop at the Royal Conservatory of Music in Toronto to work with fellow recovering dystonics. This never materialized, but I stayed in touch with Pat to discuss my progress. He began sending people with dystonia to me—he wanted to get back much more into music-making, lute-playing, and the whole early music world, and cut back on working with musicians with various dysfunctions. Accordingly, over the next couple of years, several individuals made the trek up to Toronto. I never charged them a penny—I was simply so grateful that Pat had shown me the way back to making music. Some of them had dystonias far more pronounced than mine—with fingers involuntarily curling up into the palm. One had effects that extended into her daily life.

I believe one positive factor was that I was no longer focused on being a professional guitarist. My new profession, teaching English language and literature, was intrinsically rewarding. I realized the importance of leading a balanced life. Part of the emergence of the focal dystonia came from a period of obsessive practicing. I treated myself as a work in progress, a case study, watching my fingers carefully, gradually extending and expanding. I recorded observations that helped me maintain a state of calm equilibrium:

"My problem won't get any worse, it can only improve; I never was a great virtuoso, as I began too late and had poor teaching, so I need to be realistic about choice of repertoire; much great music does not require blinding speed and facility. I was musical and a good learner; there's nothing wrong with alternate fingers to simplify right hand situations, *pi*, *pm*, *pa* alternation, *pim* scale patterns, *ami* scale patterns; focusing on correct motions slowly will inevitably lead to a set of new conditioned reflexes to be laid over the old ones."

In time, I found that not only had I recovered from the dystonia, but that my playing skills were better than they had been before its onset. I performed now and then, feeling confident that my fingers would work well. A decade ago I was invited to go to Serbia to give a number of lectures on historical guitar recordings (I have been the project leader for the series of historical CDs for DOREMI entitled "Segovia and His

Contemporaries") and duo recitals with my friend Uroš Dojčinović. Despite the inevitable stress of performing in public before large audiences, my right hand never let me down.

My gratitude for the help Patrick O'Brien gave me so many years ago is profound. I was saddened to hear of his premature passing. Although we had not been in touch for a long time, I still cherish his teachings. Fortunately, I tape recorded and transcribed my lessons with Pat. My hope is that my account may be useful for other guitarists (and lutenists) who have been afflicted with focal dystonia.

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