

THE PRACTICE OF PRACTICE



JONATHAN HARNUM

THE PRACTICE OF PRACTICE



JONATHAN HARNUM

The Practice of Practice

by Jonathan Harnum

Published independently by *Sol Ut Press*

Find musician-friendly resources at www.Sol-Ut.com

Copyright © 2014 by Sol Ut Press and Jonathan Harnum. All rights reserved. No part of this book may be copied or reproduced by any means without prior written permission of the publisher. Sol Ut and the SolUt logo are trademarks of *SolUt Press*.

ISBN-13: 978-1456407971

ISBN-10: 145640797X

**Find free supporting material for this book at:
www.ThePracticeOfPractice.com**



ABOUT *SOL UT PRESS*



Sol, in addition to being one of the names for our star, is also Latin for the 5th tone of the major scale. *Ut* is an old Latin name for the 1st tone of that scale. The interval from *Sol* to *Ut* establishes the tonal center for music in most cultures worldwide. The sun and earth in the logo are placed on a 2-line musical staff to signify the organizing musical interval of *sol* to *ut*.

Sol Ut Press is committed to music education. The more people making music, the better off we all are. ***Sol Ut Press* has given away well over a million eBooks to music students all over the world**, and we're *still* giving them away online. Get your own free digital copies of books on how to read music, jazz theory, and playing trumpet at www.sol-ut.com.

FOR MICHELLE

WITH SINCERE THANKS TO
THESE GENEROUS MUSICIANS

NICHOLAS BARRON
ETHAN BENSdorf
BOBBY BROOM
AVISHAI COHEN
SIDIKI DEMBELE
HANS JØRGEN JENSEN
INGRID JENSEN
SONA JOBARTEH
OM JOHARI
RUPESH KOTECHA
REX MARTIN
CHAD McCULLOUGH
ERIN McKEOWN
ALLISON MILLER
PETER MULVEY
COLIN OLDBERG
NICK PHILLIPS
MICHAEL TAYLOR
PRASAD UPASANI
SERGE VAN DER VOO
STEPHANE WREMBEL

TABLE OF CONTENTS

PART 1: WHAT'S GOIN' ON

1: THE CHICKEN OR THE EMBRYO	3
2: PRACTICE IS MORE THAN YOU THINK	7
3: YOUR PLASTIC BRAIN.....	15
4: SLOW DOWN, YOU MOVE TOO FAST	23
5: FAIL BETTER	31

PART 2: MOTIVATION STATION

6: MOTIVATION MASTERY.....	39
7: GO WITH THE FLOW	46
8: ASS POWER	53
9: GOALS AND GOLDILOCKS.....	56
10: SILENCE IS GOLDEN.....	62

PART 3: THE WHO

11: MONKEY SEE, MONKEY DO.....	67
12: THE BLAME GAME.....	72
13: PARENTAL UNITS.....	79
14: HOT FOR TEACHER.....	84
15: UNDER PRESSURE	91
16: THE DAY IS LONG, BUT TIME IS SHORT	97

PART 4: TIME IS ON YOUR SIDE (YES IT IS)

17: HOW MUCH IS ENOUGH	99
18: GUERRILLA PRACTICE	105
19: WHEN NO PRACTICE IS GOOD PRACTICE	108
20: BLAME IT ON MY YOUTH	112
21: WHEN I'M 64.....	118

PART 5: WHEREVER YOU MAY ROAM

22: TRASH TO TREASURE	125
23: UNDER THE INFLUENCE.....	127
24: IN THE ZONE	132
25: A 'SHED OF ONE'S OWN.....	142

PART 6: LET'S GET IT ON

26: CREATIVE PRACTICE.....	147
27: PRACTICE ANATOMY 101	157
28: STARE WITH YOUR EARS.....	162
29: IMITATION STATION	168
30: DRONE POWER.....	172
31: GOING MENTAL.....	179
32: CHAINING AND BACK-CHAINING	187
33: GO GO GADGET PRACTICE	190
34: RHYTHMNING.....	198
35: PLAYING WITH TIME.....	205
36: LET'S GET PHYSICAL	210
37: IMPROVE WITH IMPROV	216
38: COMPOSE YOURSELF.....	222
39: COVER YOUR ASSESSMENT	228

40: PLAYS WELL WITH OTHERS	235
41: PERFORMANCE PRACTICE.....	238
42: YOU AND THE NIGHT AND THE MUSIC	245
43: MOVING FORWARD.....	255

APPENDIX

44: READ BETWEEN THE LINES.....	257
45: STRICTLY COMMERCIAL	273

DEDICATION

TO THE MEMORY AND VISION OF MUSIC EDUCATION PIONEER BENNETT REIMER

It is how music is connected to life that makes it so important for people. To understand music is to understand its intimate connections to all of human experience. To experience music is to experience how we as individuals are connected to all other humans in our communities and all other communities in the world and in history. Music is all-encompassing.

BENNETT REIMER (1932-2013)
A PHILOSOPHY OF MUSIC EDUCATION, P. 60

PART ONE

WHAT'S GOIN' ON

WHAT PRACTICE IS,
WHAT IT DOES TO YOU,
& WHY IT MATTERS

*Learning without thought is labor lost;
thought without learning is perilous.*

CONFUCIUS (551-487 BC)

PICK-UP NOTES

Names have power. Definitions of what practice is (and isn't) can either lift you up or hamstring you. According to every professional musician I've spoken with, practice is a lot more than sitting in a room alone, working on technique.

Practice does some cool things to the brain, too. Knowing what the brain requires for solid, long-term learning will help you get better at music, or anything else.

THE CHICKEN OR THE EMBRYO

The sweat of hard work is not to be displayed. It is much more graceful to appear favored by the gods.

MAXINE HONG KINGSTON, AUTHOR (B. 1940)

ZING-YANG KUO RUBBED WARM VASELINE OVER A clutch of fertilized chicken eggs. He was conducting research that examined the role genetic memory—or instinct—played in the pecking behavior of chickens. You could say Zing-Yang Kuo was investigating a young chick’s “talent” for pecking.

Kuo was a developmental psychologist active in the first half of the 20th century who investigated the role of “nature versus nurture” in animal behaviors. Kuo believed that labeling behaviors as instinctive or genetic blinded us to the developmental realities that he suspected lay behind those behaviors. In the early 1920s when Kuo published his research, many believed the distinctive pecking behavior of newly hatched chickens was an instinct, a behavior encoded in chickeny genetics. Zing-Yang Kuo discovered that a chick’s ability to peck is a result of a much more interesting process, one that smudges the line between nature and nurture.

As the petroleum jelly soaked into the egg shells, the shell became translucent. Kuo carefully watched the golden yolks develop into embryos. After a few days of development, the tiny proto-hearts of the chicks began to beat. Soon, the yolk was consumed by the growing chick, and each delicate crèche now contained a tightly compacted future chicken. Each chick was packed so snugly in its shell that its neck was

stretched downward until its head rested directly over its tiny thumping heart.

Kuo observed something interesting about the position of the embryo's head. The motion of the rhythmically pulsing heart caused the developing chick's head and neck to move in a way that "precisely mimics"¹ the characteristic pecking motion chicks use when feeding. The pecking motion is *not* encoded in the genetic code. Instead, the chicks practice the pecking behavior thousands of times inside the egg before hatching.

The kind of practice chicks are doing inside the egg is certainly *not* deliberate practice. Call it "circumstantial practice." It's kind of like practice that happens because of where you grow up. Indian classical vocalist Prasad Upasani said, "We have a word for it called *samskar*, which basically translates to 'unconscious influence.' Basically you develop an ear for music. It definitely helps to be exposed to a lot of music at an early age."

Prasad Upasani is an accomplished vocalist in the Hindustani classical musical tradition of northern India. One of Prasad's earliest memories was waking to hear his father's singing practice early in the morning. Sometimes young Prasad would toddle in and sing some of his favorite melodies with his father. He spoke fondly of those early-morning sessions with his dad. Researchers have found that many professional musicians' early experiences with practice were pleasant or fun.² It stands to reason that if practice is pleasant or fun early on, we'll want to do more of it. A good thing to remember if you're a beginner of any age, or a parent.

Some practice takes place because of where we happen to be. You can see *Samskar* in the biographies of lots of accomplished people, including Sona Jobarteh, the only female kora virtuoso in the world. She grew up in the rich sonic environment of a Griot family in Gambia, West Africa. The Griot tradition is a venerable one, going back over 700 years.

¹ Firestein (2012)

² Sosniak (2006)

Griots were musicians and dancers who traveled throughout the Mali empire bringing news, diplomacy, and ceremonial services to commoners and royalty alike. Ms. Jobarteh first began to learn kora at age four from her brother, Tunde Jegede.

Or consider master tuba player and teacher Rex Martin. Both of Rex's older brothers played tuba, so Rex's auditory cortex was exposed to the sound of the tuba before he was even born. Neuroscience tells us that when the brain hears a new sound, it gets to work processing that sound until it recognizes the input, helping us attend to the sound more closely. Rex's young brain received tuba listening practice very early in his development. There is some pretty solid scientific evidence that babies in the womb can learn songs and sounds, one of the most important sounds being mommy's voice.³

The *samskar*, or unconscious early experiences of Prasad, Sona, and Rex are similar to the chick practicing its pecking behavior inside the egg. Unconscious influences like these are one source of the pernicious notion of "natural" talent, the idea that you're either born with musical ability or you're not. There is a great deal of lively, sometimes heated debate as to whether natural musical ability exists.⁴

For our purposes, natural musical ability is a can of worms best left alone, because the answer to the question, fascinating though it might be, has nothing to do with getting better. Whatever gifts have been given or withheld from you, practice is still the *only* way to get better at anything: music, chess, sports, programming, parenting.... Anything.

The good news is that beneficial circumstances like a rich musical environment aren't crucial to getting really good at something. Lots of great musicians—including several I talked to about practice for this book—didn't have the benefit of a rich musical childhood. Although it certainly helps, no matter how musically blessed someone may be by circumstance, practice is *still* the only way to get better.

³Trainor, 2005; Chang & Merzenich, 2003; Hepper, 1991; Parncutt, 1993.

⁴e.g., the scholarly smackdown between Gagné, 2013 and Ericsson, 2013.

If you want to get better, you simply *have* to practice. There's no way around it. Even though Prasad, Sona and Rex all had beneficial early experiences with music, each has had to spend thousands of hours in practice to acquire their musical prowess. Rex told me, "If people could've lived my life and all the hours I've spent practicing the tuba alone in some little room someplace, they probably wouldn't label me as being particularly talented."⁵

And yet, Rex Martin is supremely talented, veteran of thousands of professional recordings and performances around the world alongside other world class artists, some of whom might surprise you. Chicago Symphony? New York Philharmonic? Luciano Pavorotti? Rex is a master of classical tuba, so these credits are impressive, but not surprising. Rex has also played with Grammy Award winners like R&B pioneers Earth, Wind & Fire, the father of Soul, Ray Charles, and legendary Jazz vocalist Sarah Vaughn.

To see talent as a gift of natural ability instead of perceiving the long hours of practice that creates talent is nothing new. Michelangelo said, "If people knew how hard I had to work to gain my mastery, it would not seem so wonderful at all."

Rex, Sona and Prasad are talented because they have practiced, and because they *continue* to practice. Diligently. Rex said, "There is no such thing as maintenance. If you're not trying to get better, you're getting worse."

And here's the thing: practice is *not* just sitting in a room, playing scales and repeating passages. *Samskar* is just one of the semi-hidden ways people get better at music. There are many others. I'll show you more in the coming pages.

Musical ability doesn't come from either the chicken *or* the embryo, it's the chicken *and* the embryo. Talent isn't some mysterious natural ability. Talent is practice in disguise.

And practice is more than you think.

⁵All quotations from musicians in this book—unless otherwise noted—are taken from my interview with the artist.

SPINNING WHEEL, GOT TO GO ROUND

*We must not allow other people's
limited perceptions to define us.*

VIRGINIA SATIR, PSYCHOTHERAPIST (1916-1988)

CHICAGO SINGER-SONGWRITER NICHOLAS BARRON looks like Vince Vaughn, has a voice as big as John Lee Hooker's, and writes and performs in a style all his own. Barron often opens for the legendary bluesman Buddy Guy at his eponymous Chicago blues club. Nicholas plays all over Chicago. Under it, too. As a younger man he spent his days playing in Chicago's south-side subway stations. Nicholas was one of the first professional musicians I talked with about music practice, and one of the first things he said was, "I never practice."

Barron's direct, unequivocal statement puzzled me. Because he performs with such skill and sings so powerfully, I was sure his ability *had* to be a result of many years of practice. His statement that he *never* practiced went against everything the research and popular writing on practice had been telling me. I remember thinking, "What the heck is going on here?"

Nicholas agreed to sit down for a more formal interview, one designed to answer three questions about practice: What is practice according to musicians from diverse genres? What do these musicians actually *do* to get better? And how did they learn how to practice? Over twenty professional musicians from different genres have shared their thoughts about practice with me. Some of these musicians are among the best in the world at what they do.

When I spoke with Nicholas, I'd just spent more than three years poring over research on music practice, reading hundreds of peer-reviewed studies and dozens of popular books on practice, all of which pointed to *deliberate practice* as the holy grail of learning, musical or otherwise. Much of the research—and especially writings for the general public—included the oft-quoted 10,000-hour rule, the notion that it takes at least that many hours of deliberate practice to achieve mastery in any field.

That definition—deliberate practice, and the 10,000-hour rule that goes along with it—came from a 1993 research paper by Anders Ericsson, Ralf Krampe, and Clemens Tesch-Römer, in which they presented data from four different studies of experts in various fields, including music.

Even if it's true, the 10,000-hour benchmark is a red herring for several reasons. First, the only practice that is vitally important is the practice you're doing *right now*. Forget about accumulating 10,000 hours and focus instead on today's learning challenge. Experts who accumulated 10,000 hours of practice weren't trying to accumulate those hours; their focus was elsewhere, on the task at hand.

Another reason the 10,000-hour rule of deliberate practice is misleading has to do with definitions. Musicians in that 1993 study were all Western European classical musicians. Clearly, Nicholas Barron, who said he never practices, *has* to be using a different definition of practice, because he's an excellent musician. So what does practice mean for Nicholas Barron, and what does he do to get better? His approach to practice is covered later in the book. It's pretty cool.

Erin McKeown is another musician who isn't all that interested in the word "practice." In fact, she found practice "really hard to talk about." The night before our interview, Erin said she was chatting with a friend about practice and said they spoke about how "there is a sort of identity attached to whether you practice or not."

Erin characterized it as a "sort of myth: the more you

know about music somehow the less passionate you are, the less *real* your music becomes, which I think is a part of that identity. We don't want to practice because we don't want to ruin it."

That sentiment seemed to run deep with Erin, because she often avoided the word "practice" itself, and would instead say things like, "spend time with my instrument." Erin echoed Nicholas Barron's sentiment when she said, "My experience with my instruments was not about practice for a long time. For many, many, many years, I did not practice."

Another puzzling statement. Erin is a professional touring musician, veteran of thousands upon thousands of performances, and she has critically acclaimed albums under her belt. What did Erin do to get so good? You'll learn about her approach later in the book, too. It's pretty cool, too.

I began to suspect that a better question than, "how do great musicians practice," is "how do musicians get better?" Omitting the "P-word" avoids some of the baggage that seems to be associated with the word "practice."

Definitions of practice matter. All of the research published on music practice in English—and I do mean *all* of it—focuses exclusively on Western classical music practice. Some researchers have touched peripherally on other kinds of music practice, like the important work investigating learning in popular music by Lucy Green, or Paul Berliner's thorough study of jazz musicians, or Patricia Shehan Campbell's examination of music teaching and learning in non-Western traditions.¹ But even in these studies, the details of *exactly* how these musicians practice wasn't the focus.

At the moment, there are no studies I'm aware of that specifically examine how jazz musicians practice, no study on how punk rock musicians get better, no study on how singer-songwriters like Nicholas Barron and Erin McKeown practice. Nor are there studies that examine how Indian

¹Berliner, 1994; Green, 2002, 2008; Shehan Campbell, 1991.

classical musicians practice, or didgeridoo players, or hip hop artists, or DJs.... Nothing. Zip. Zilch. Nada.

Now, don't get me wrong. Music practice research done so far is a valuable resource. But limiting our exploration of practice to Western classical music is like assuming that all plants will grow in any climate. That's crazy talk. What grows and thrives in one climate will shrivel and die in another. We need to expand our understanding of how people get better to *all* kinds of music-making. Why not? Mark Twain said it like this:

Travel is fatal to prejudice, bigotry, and narrow-mindedness, and many of our people need it sorely on these accounts. Broad, wholesome, charitable views...cannot be acquired by vegetating in one little corner of the earth all one's lifetime.²

I've conducted interviews with dozens of professional musicians from all across the musical map, many of them world-class performers: singer-songwriters, jazz musicians, African djembe masters, Indian classical musicians, Western classical musicians, and musicians from other traditions, too. *Every single one* of these musicians listed a slew of activities they consider to be practice that aren't usually recognized as practice. I'm going to show them to you.

No book can give you all the answers, but I hope this book helps you think about practice in a broader way, beyond the walls of the "typical" practice room. In this book you'll find specific strategies, techniques, and mindsets that any musician needs to get better whether you play rock or Bach.

To help understand the many ways people get better at music, I've used a metaphor to organize music practice into six simple categories. Think of practice as a colorful, six-bladed pinwheel in motion. Trying to see the boundary between the pinwheel blades while the pinwheel spins is like trying to understand everything about practice at once. It's impossible

²Twain, 1869, p. 650.

to see anything clearly as the pinwheel spins: edges and colors blur together, and it's difficult to know what's what.



But if you stop the pinwheel, you can see it more clearly. You can count the blades, see their shape and color; you can see where one color stops and the next begins; you can see how it spins on its axle. Music practice is like that 6-bladed pinwheel. We're going to stop the practice pinwheel to get a better look at how practice works. As we do, keep in mind the advice of martial arts master Bruce Lee, who said, "Absorb what is useful; discard what is not; add what is uniquely your own."

Each "blade" of the practice pinwheel is a book section:

- 1) **What:** When you know what something is, you have power over it. This section covers what practice is, how practice changes the brain, and how you can harness the nature of those changes to help you get better.
- 2) **Why:** Without motivation, there would be no reason to get better. This section covers motivation and explores how your beliefs affect not only your motivation to learn, but how you practice as well.
- 3) **Who:** Many people will have an impact on your practice, most especially your own Self. Your attitudes and behaviors and beliefs profoundly affect how you get better. There are others who can help or hinder, too, like parents, teachers, and peers.
- 4) **When:** Time and practice. How much should you practice? When during the day is best? What's the minimum you can get away with? How little is too little? Can you practice too much? How does music practice develop from beginner to expert?
- 5) **Where:** Covers the places of practice. A short section covering the practice space itself, including what makes one good or bad. This section also takes a look at how context can affect your practice.
- 6) **How:** What do you actually *do* to get better? What works best? This is the aspect of practice everyone wants to know, and it's the longest section of the book.

SO WHAT IS PRACTICE?

Most of us have a stereotype of practice in our head: some hapless classical musician, sitting in a windowless room repeating things over and over. Sheet music is usually involved. Our stereotype of practice often includes scales, and exercises, and tons of repetition, and a general idea that practice isn't fun at all. Sure, all those things *can* be practice, but as you'll discover, many great musicians do *none* of those things.

The idea that practice isn't fun is explicitly stated in one of the most broadly adopted descriptions of practice, *deliberate practice*, which claims that practice "is not inherently unenjoyable."³ I don't believe that's true, and I'm not alone.⁴ Every professional musician I've spoken with said that practice is quite enjoyable. For some, including yours truly, practice is necessary for mental well-being. Sure, practice can be challenging and frustrating and effortful, but at the same time it's engaging, and often a lot of fun. Jazz trumpeter Don Cherry summed it up best when he said, "There is nothing more serious than having fun."

There are other activities that increase one's musical ability, not just practice time alone in a room. I believe anything that increases your musical ability is practice, and I'm not alone there, either. Here are just a few activities highly accomplished professional musicians consider to be practice, not in any particular order:

- | | |
|---------------------------|-------------------|
| ◇ Listening | ◇ Improvising |
| ◇ Performing | ◇ Teaching |
| ◇ Watching others perform | ◇ Composing |
| ◇ Playing informally | ◇ Group rehearsal |

³Ericsson, Krampe & Tesch-Römer, 1993, p. 368

⁴e.g., Hodgkin (1985) who wrote, "enjoyable practice does not have to be lacking in rigor." (p. 45); and "play is there at the beginning, and it remains central." (p. 52)

Over the course of the next couple hundred pages, I'll show you these and more strategies that musicians use to get better. Good practice is a lot more than you think. It can also be a lot of fun.

STRATEGY VS. TECHNIQUE

Knowing the difference between a strategy and a technique is important for getting the most out of this book. The two are interrelated. A strategy is a learning approach that anyone of any skill level can adopt. Technique is the skill necessary to use the strategy well. Here's a simple example.

When great musicians practice, they go slowly enough that errors are avoided. When an error does crop up, expert practicers fix those errors immediately. That's the strategy: fixing a mistake immediately. Anybody can do it, and anybody who adopts that strategy will get better faster than those who don't.

The *technique* necessary for the strategy of fixing errors immediately is based on your ability to actually *perceive* the error, a common difficulty for beginners. Skill at perceiving errors will help you get the most out of the strategy of fixing mistakes immediately. Throughout the book I'll call your attention to lots of strategies, as well as the techniques you need to squeeze the most juice out of a strategy and make it really work for you.

Understanding how the brain learns and what long-term music practice does to the old gray matter in your noggin will also help you practice smarter. Knowing some of the neural mechanisms of learning has certainly affected my own approach to practice, and I bet they'll have a positive impact on your practice, too. They're covered in the following chapters.

BUT FIRST: EXTENSIONS

In music theory, extensions are chord tones added to

basic chords that give the chord more color and often a greater sense of forward motion. In education, extensions are activities or exercises that can be done in addition to the main lesson. In this book, extensions are links to more information: videos, websites, recordings, books, and anything else that connects to the chapter's theme. The more ways you can connect to an idea, the better that idea and information will stick in your head, and the more useful it will be. These extensions have been carefully chosen to help with that process.

With a smart phone or tablet and a QR reader, you can see, hear, and read more. *Scan* is a good QR reader. It's free online at <http://is.gd/puzuwa>. Once it's on your device, fire up the app, focus on one of the codes below, and off you go. If you don't have a smart phone, enter the Web address into a browser. If you're reading this on a Web-connected device, click on the HTML links to access the extra information.



I'M NOT SUPERMAN

One of Nicholas Barron's many excellent tunes. On the Web: <http://is.gd/atupib>.

You can listen to him talk about his practice at: <http://is.gd/hibesa>

THAT'S JUST WHAT HAPPENED

Erin McKeown sings and plays piano and guitar on her tune that evokes *St. James Infirmary* before it gets lively. On the Web at <http://is.gd/boququ>. Hear Erin's interview on practice at <http://is.gd/oluxiw>.



WRITING SAMPLE ENDS HERE

WANT TO READ MORE?

TO GET AN E-MAIL WITH
A 30% DISCOUNT CODE WHEN
THE PRACTICE OF PRACTICE
IS PUBLISHED IN JULY 2014

CLICK HERE

or shoot me an e-mail:
harnum@u.northwestern.edu

PART TWO

MOTIVATION STATION

GETTING PUMPED TO PRACTICE

*People often say that motivation doesn't last. Well,
neither does bathing—that's why we recommend it daily.*

ZIG ZIGLAR, MOTIVATION GURU (1926-2012)

PICK-UP NOTES

Without some kind of motivation, practice would never happen. Motivation is a mysterious beast. Describing what drives motivation is a bit like the four blind men describing the elephant. The big picture isn't easy to see. It's even harder to see the things that can suck the motivation right out of you. Learn about some of the powerful sources of motivation in this section.

PART THREE

THE WHO

SELF AND OTHERS IN PRACTICE

*The struggle is not with the instrument; the
struggle is with yourself.*

VINCE CICHOWICZ, TRUMPETER & TEACHER (1927-2006)

PICK-UP NOTES

The first “who” in this section is—as Ray Charles sang—*Nobody but you*. Even the way your brain is wired affects your practice.

Other people influence your practice, too. Relationships with teachers, parents, friends, enemies, frenemies, and strangers will all have an impact on your practice (especially frenemies).

PART FOUR

TIME IS ON
YOUR SIDE
(YES IT IS)

TIME AND PRACTICE

*A genius! For the last 37 years I've practiced
14 hours a day and now they call me a genius!*

PABLO SARASATE, VIOLINIST (1844-1908)

PICK-UP NOTES

Forget about the 10,000-hour rule you've heard so much about. It's a red herring. What's important is not the hours you've practiced, but the kind of practice in your hours. Focus on the tree, not the forest.

There *are* temporal aspects of practice worth considering, like time of day, how long a practice session should be, and even how practice skill develops over time.

PART FIVE

WHEREVER
YOU MAY
ROAM

PRACTICE SPACES
AND PLACES

There are no shortcuts to any place worth going.

BEVERLY SILLS, SOPRANO (1929-2007)

PICK-UP NOTES

There are two aspects of “where.” The first part has to do with context, an influential aspect of any kind of learning. The culture surrounding you, the global and the local zeitgeist, as well as the people and opportunities presented to you, all have an influence on your practice.

The second aspect of place is the practice space itself. What makes for a good practice space? The most important characteristics have more to do with the psychological nature of the space than its physical properties.

PART SIX

LET'S GET IT ON

USEFUL PRACTICE STRATEGIES

*The Buddhas do but tell of the Way;
it is up to us to swelter at the task.*

GAUTAMA SIDDHARTA
(c. 563-483 BCE)

PICK-UP NOTES

This section covers some great information on how best to practice. I've only included techniques and strategies that aren't covered more thoroughly elsewhere. The section is split loosely into three parts: set-up, execution, and assessment.

As you move through the section, remember the difference between a strategy and technique. Strategy is an approach that just about anybody of any level can use immediately. Technique is the skill you need to get the most out of the strategy.

READ BETWEEN THE LINES

While knowledge may provide a useful point of reference, it cannot become a force to guide the future.

HERBIE HANCOCK, MUSICIAN (B. 1940)

HELPFUL BOOKS

I'm an avid and critical reader, and recommending books to others is a duty I take seriously. The following books have had a significant impact on me, both personally and professionally, and I highly recommend each of them. If you're looking for a good, interesting read to take your understanding of practice further, start with these. You can find links to all these titles on this book's web site: www.ThePracticeOfPractice.com/reading



- Bruser, M. (1997). *The art of practicing: A guide to making music from the heart*. New York: Three Rivers Press.
- Bailey, D. (1992). *Improvisation: Its nature and practice in music*. Boston, MA: Da Capo Press.
- Byrne, D. (2013). *How music works*. New York: McSweeney's.
- Coyle, D. (2009). *The talent code: Greatness isn't born. It's grown. Here's how*. New York: Bantam Dell.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Ballantine.
- Eisner, E. (2002). *The arts and the creation of mind*. New Haven, CT: Yale University Press.
- Green, B. & Gallwey, T. (1986). *The inner game of music*. New York: Doubleday.
- Green, B. (2005). *The mastery of music: Ten pathways to true artistry*.
- Green, L. (2002). *How popular musicians learn: A way ahead for music education*. London: Ashgate Publishing.

- Hickey, M. (2012). *Music outside the lines: Ideas for composing in K-12 music classrooms*. New York: Oxford University Press.
- Jourdain, R. (1997). *Music, the brain, and ecstasy: How music captures our imagination*. New York: Harper.
- Kerchner, J. L. (2014). *Music across the senses: Listening, learning, and making meaning*. New York: Oxford University Press.
- Nachmanovitch, S. (1990). *Free play: Improvisation in life and art*. New York: Tarcher/Putnam.
- Reimer, B. (2003). *A philosophy of music education: Advancing the vision* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
- Sacks, O. (2007). *Musophilia: Tales of music and the brain*. New York: Alfred A. Knopf.
- Shehan Campbell, P. (1991). *Lessons from the world: A cross-cultural guide to music teaching and learning*. New York: Schirmer Books.
- Syed, M. (2010). *Bounce: Mozart, Federer, Picasso, Beckham, and the science of success*. New York: Harper.
- Werner, K. (1996). *Effortless mastery: Liberating the master musician within*. New Albany, IN: Jamey Abersold Jazz.
- Westney, W. (2003). *The perfect wrong note: Learning to trust your musical self*. Pompton Plains, NJ: Amadeus Press.
- Zuckerman, A. (2010). *Music*. New York: Abrams.

RESEARCH & OTHER WRITINGS

The following list of research articles, books, and other sources have all been influential either directly or indirectly in the writing of this book and in the development of my thinking about music practice. I realize many of the references that follow aren't quoted or referenced directly in the text, but I provide them here with the hope that others will find them useful for their own investigations into music practice.

I'm indebted to the musicians, scholars, researchers (and their participants), universities, and publishers responsible for this important body of work. Thank you.

- Akbik, F. V., Bhagat, S. M., Patel, P. R., Cafferty, W. B. J., & Strittmatter, S. M. (2013). Anatomical plasticity of adult brain is titrated by Nogo receptor. *Neuron*, 77(5), 859-866.
- Allen, J., Damasio, H., & Grabowski, T. (2002). Normal

- neuroanatomical variation in the human brain: An MRI-volumetric study. *American Journal of Physical Anthropology*, 118 (4), 341-358.
- Antony, J.W., Gobel, E.W., O'Hare, J.K., Reber, P.J., & Paller, K.A. (2012). Cued memory reactivation during sleep influences skill learning. *Nature Neuroscience*, 15, 1114-1116.
- Asmus, E. P. (1986). Student beliefs about the causes of success and failure in music: A study of achievement motivation. *Journal of Research in Music Education*, 34(4), 262-278.
- Aton, S. J., Seibt, J., Dumoulin, M., Jha, S. K., Steinmetz, N., Coleman, T., ... Frank, M. G. (2009). Mechanisms of sleep-dependent consolidation cortical plasticity. *Neuron*, 51, 454-466.
- Austin, J. R., & Berg, M. H. (2006). Exploring music practice among sixth-grade band and orchestra students. *Psychology of Music*, 34(4), 535-558.
- Baker, J. (2007). Nature and nurture interact to create expert performers. *High Ability Studies*, 18(1), 57-58.
- Baltes, P. B. (1998). Testing the limits of ontogenetic sources of talent and excellence. *Behavioral and Brain Sciences*, 21, 407-408.
- Barrett, J. R., McCoy, C. W., & Veblen, K. K. (1997). Sound ways of knowing: Music in the interdisciplinary curriculum. New York: Schirmer.
- Barron, N. (2013). Biographical material retrieved from <http://nicholasbarron.com/music/biography>.
- Barry, N. H., & McArthur, V. (1994). Teaching practice strategies in the music studio: A survey of applied music teachers. *Psychology of Music*, 22(1), 44-55.
- Bengtsson, S. L., Nagy, Z., Skare, S., Forsman, L., Forssberg, H., & Ullen, F. (2005). Extensive piano practicing has regionally specific effects on white matter development. *Nature Neuroscience*, 8(9), 1148-1150.
- Berkman Center for Internet & Society (2012). The community supported musician. Retrieved from <http://blogs.law.harvard.edu/mediaberkman/2012/04/11/rb-198-the-community-supported-musician-rethinking-music-ix/>
- Berliner, P. (1994). *Thinking in jazz: The infinite art of improvisation*. Chicago: University of Chicago Press.
- Berry, D. C. (1987). The problem of implicit knowledge. *Expert Systems*, 4(3), 144-151.
- Berkowitz, A. L. (2010). *The improvising mind: Cognition and creativity in the musical moment*. New York: Oxford University

- Press.
- Blacking, J. (1973). *How musical is man?* Seattle, WA: University of Washington Press.
- Blackmore, S. (2000). *The meme machine*. New York: Oxford University Press.
- Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher*, 13(6), 4-16.
- Bloom, B. S. (1985). Generalizations about talent development. In B. S. Bloom (Ed.), *Developing talent in young people* (pp. 507-549). New York: Ballantine.
- Boespflug, G. (2004). The pop music ensemble in music education. In Rodriguez (Ed.), *Bridging the gap: Popular music and music education* (pp. 191-204). Reston, VA: MENC.
- Boyer, J. M. (2007). *The Arts and Aging Toolkit*. New York: National Guild of Community Schools of the Arts.
- Brand, M. (1982). Relationship between musical environment and musical aptitude among sixth grade children. *Bulletin of the Council for Research in Music Education*, 13, 13-19.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513-531.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1994). Ecological models of human development. In M. Gauvain & M. Cole (Eds.), *Readings on the development of children* (2nd ed., pp. 1643-1647). New York: Freeman.
- Bronfenbrenner, U. (2000). Ecological systems theory. In A. E. Kazdin (Ed.), *Encyclopedia of psychology*, (Vol. 3, pp. 129-133). New York: Oxford University Press.
- Broom, B. (2006). Finding your "voice" in jazz. *Chicago Jazz Magazine*, September, 2006.
- Brosnan, S. & de Waal, F. B. M. (2003). Monkeys reject unequal pay. *Nature*, 425 (6955), pp. 297-299.
- Brown, R. A. (1928). A comparison of the whole, part, and combination methods of learning piano music. *Journal of Experimental Psychology*, 11(3), 235-248.
- Brunstein, J.C., & Gollwitzer, P.M. (1996). Effects of failure on subsequent performance: The importance of self-defining goals. *Journal of Personality and Social Psychology*, 70, 395-407.
- Bruser, M. (1997). *The art of practicing: A guide to making music from the heart*. New York: Three Rivers Press.

- Byo, J. L., & Cassidy, J. W. (2008). An exploratory study of time use in the practice of music majors: Self-report and observation analysis. *Update: Applications of Research in Music Education*, 27(1), 33-40.
- Carr, I. (2006). *Miles Davis: The definitive biography*. New York: Da Capo Press.
- Chaffin, R., Imreh, G., & Crawford, M. (2002). *Practicing perfection: Memory and piano performance*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Chandler, T. A., Chiarella, D., & Auria, C. (1987). Performance expectancy, success, satisfaction, and attributions as variables in band challenges. *Journal of Research in Music Education*, 35(4), 249-258.
- Chang, E. F. & Merzenich, M. M. (2003). Environmental noise retards auditory cortical development. *Science*, 300, pp. 498-502.
- Coffman, D. D. (1990). Effects of mental practice, physical practice, and knowledge of results on piano performance. *Journal of Research in Music Education*, 38(3), 187-196.
- Coyle, D. (2009). *The talent code: Greatness isn't born. It's grown. Here's how*. New York: Bantam Dell.
- Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York: Harper.
- Csikszentmihalyi, M. (2008). *Flow: The psychology of optimal experience*. New York: Harper.
- Currey, M., ed. (2013). *Daily rituals: How artists work*. New York: Random House.
- Davidson, J., Moore, D. G., Sloboda, J., & Howe, M. (1998). Characteristics of music teachers and the progress of young instrumentalists. *Journal of Research in Music Education*, 46(1), 141-160.
- Dawkins, R. (2006). *The selfish gene: 30th anniversary edition*. New York: Oxford University Press.
- Dickey, M. R. (1992). A review of research on modeling in music teaching and learning. *Bulletin of the Council for Research in Music Education*, 113, 27-40.
- Duke, R. A., Simmons, A. L., & Cash, C. D. (2009). It's not how much; it's how: Characteristics of practice behavior and retention of performance skills. *Journal of Research in Music Education*, 56(4), 310-321.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41(10), 1040-1048.

- Dweck, C. S. (2007). *Mindset: The new psychology of success*. New York: Ballantine.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256-273.
- Elbert, T., Wienbruch, C., Rockstroh, B., & Edward, T. (1995). Increased cortical representation of the left hand in string players. *Science*, 270, 305-307.
- Ellington, E. K. (1976). *Music is my mistress*. New York: Da Capo Press.
- Elliot, D. J. (1995). *Music matters: A new philosophy of music education*. New York: Oxford University Press.
- Elliot, A. J., McGregor, H. A., & Gable, S. (1999). Achievement goals, study strategies, and exam performance: A mediational analysis. *Journal of Educational Psychology*, 91, 549-563.
- Emmons, S. E. (2004). Preparing teachers for popular music processes and practice. In Rodriguez (Ed.), *Bridging the gap: Popular music and music education* (pp. 159-174). Reston, VA: MENC.
- Ericsson, K. A. (Ed.). (1996). *The road to excellence: The acquisition of expert performance in the arts and sciences, sports, and games*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Ericsson, K. A. (2007). Giftedness and evidence for reproducibly superior performance: An account based on the expert performance framework. *High Ability Studies*, 18(1), 3-56.
- Ericsson, K. A., & Charness, N. (1999). Expert performance: Its structure and acquisition. In S. Ceci, W. Williams, D. Muir & A. Slater (Eds.), *The nature-nurture debate: The essential readings* (pp. 200-256). Malden, MA: Blackwell.
- Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3), 363-406.
- Ericsson, K. A., Tesch-Römer, C., & Krampe, R. T. (1990). The role of practice and motivation in the acquisition of expert-level performance in real life: An empirical evaluation of a theoretical framework. In M. J. A. Howe (Ed.), *Encouraging the development of exceptional skills and talents* (pp. 109-130). Leicester, U.K.: BPS Books.
- Forster, J., Friedman, R. S., & Liberman, N. (2004). Temporal construal effects on abstract and concrete thinking: Consequences for insight and creative cognition. *Journal of Personality and Social Psychology*, 87(2), pp. 177-189.

- Firestein, S. (2012). The name game. In J. Brockman (Ed.), *This will make you smarter: New scientific concepts to improve your thinking* (62-64). New York: Harper Perennial.
- Freeman, J. (2000). Teaching for talent: Lessons from the research. In C. F. M. van Lieshout & P. G. Heymans (Eds.), *Developing talent across the life span* (pp. 231-248). East Sussex, UK: Psychology Press.
- Gagné, F. (2007). Predictably, an unconvincing second attempt. *High Ability Studies*, 18(1), 67-69.
- Geiersbach, F. J. (2000). Musical thinking in instrumental practice: An investigation of practice strategies used by experienced musicians. (Unpublished doctoral dissertation). Columbia University, New York.
- Giedd, J. N. (2008). The teen brain: Insights from neuroimaging. *Journal of Adolescent Health*, 42(4), 335-343.
- Gjerdingen, R. O. (2013). Psychologists and musicians: Then and now. In Diana Deutsch (Ed.), *The psychology of music*, 3 ed., pp. 683-707. New York: Academic Press.
- Gollwitzer, P.M. (1986). Striving for specific identities: The social reality of self-symbolizing. In R. Baumeister (Ed.), *Private self and public self* (pp. 143-159). New York: Springer.
- Gollwitzer, P. M., Sheeran, P., Michalski, V., & Seifert, A. E. (2009). When intentions go public: Does social reality widen the intention-behavior gap? *Association for Psychological Science*, 20(5), pp. 612-618.
- Green, B. (2005). *The mastery of music: Ten pathways to true artistry*. New York: Broadway Books.
- Green, L. (2002). *How popular musicians learn: A way ahead for music education*. London: Ashgate Publishing.
- Green, L. (2008). *Music, informal learning and the school: A new classroom pedagogy*. London: Ashgate Publishing.
- Gross, T. (2004). *In the Junkyards: Grandmaster Flash*. In *All I did was ask: Conversations with actors, musicians, and artists* (pp. 137-142). New York: Hyperion. Original interview can be found online at <http://is.gd/kopota>.
- Hallam, S. (1995a). Professional musicians' approaches to the learning and interpretation of music. *Psychology of Music*, 23(2), 111-128.
- Hallam, S. (1995b). Professional musicians' orientations to practice: Implications for teaching. *British Journal of Music Education*, 12(1), 3-19.
- Hallam, S. (1997). What do we know about practising? Towards

- a model synthesising the research literature. In H. Jørgensen & A. C. Lehmann (Eds.), *Does practice make perfect? Current theory and research on instrumental music practice* (pp. 179-231). Copenhagen, Denmark: Norges musikkhøgskole.
- Hallam, S. (2002). Musical motivation: Towards a model synthesising the research. *Music Education Research*, 4(2), 225-244.
- Hallam, S., & Jørgensen, H. (2009). Practising. In S. Hallam, I. Cross & M. Thaut (Eds.), *The Oxford handbook of music psychology* (pp. 265-273). New York: Oxford University Press.
- Harnischmacher, C. (1997). The effects of individual differences in motivation, volition, and maturational processes on practice behavior of young instrumentalists. In H. Jørgensen & A. C. Lehmann (Eds.), *Does practice make perfect? Current theory and research on instrumental music practice* (pp. 71-88). Copenhagen, Denmark: Norges musikkhøgskole.
- Harnum, J. (2012). Compose yourself: Older people and Garage Band. In A. Clements (Ed.) *Alternative approaches to music education: Case studies from the field*. New York: Rowman & Littlefield.
- Haroutounian, J. (2000). Perspectives of Musical Talent: A study of identification criteria and procedures. *High Ability Studies*, 11(2), 24p.
- Haston, W. A. (2004). Comparison of a visual and an aural approach to beginning wind instrument instruction. (Unpublished PhD dissertation). Northwestern University, Evanston, IL.
- Henley, P. T. (2001). Effects of modeling and tempo patterns as practice techniques on the performance of high school instrumentalists. *Journal of Research in Music Education*, 49(2), 169-180.
- Hepper, (1991). An example of fetal learning before and after birth. *Irish Journal of Psychology* 12 (95-107)
- Hewitt, M. P. (2001). The effects of modeling, self-evaluation, and self-listening on junior high instrumentalists' music performance and practice attitude. *Journal of Research in Music Education*, 49(4), 169-180.
- Hodges, D. (1975). The effects of recorded aural models on the performance achievement of students in beginning band classes. *Journal of Band Research*, 12, 30-34.
- Hodgkin, R. A. (1985). *Playing and exploring: Education through the discovery of order*. London: Methuen.
- Hoffman, R. R., & Lintern, G. (2006). Eliciting and representing the knowledge of experts. In K. A. Ericsson, N. Charness, P. J.

- Feltovitch & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp. 203-222). New York: Cambridge University Press.
- Hong Kingston, M. (1976). *The woman warrior: Memoirs of a girl among ghosts*. New York: Random House Digital, Inc.
- Howe, M., & Sloboda, J. (1991). Young musicians' accounts of significant influences in their early lives. 2. Teachers, practising and performing. *British Journal of Music Education*, 8(1), 53-63.
- Howe, M. J. A., Davidson, J. W., & Sloboda, J. A. (1999). Innate talents: Reality or myth? In S. Ceci, W. Williams, D. Muir & A. Slater (Eds.), *The nature-nurture debate: The essential readings* (pp. 258-289). Malden, MA: Blackwell.
- Howey, B. (2011). University of Idaho Lionel Hampton International Jazz Festival evaluation rubric. Retrieved 1/9/14 from <http://is.gd/esimaf>.
- Hyde, K. L., Lerch, J., Norton, A., Forgeard, M., Winner, E., Evans, A. C., & Schlaug, G. (2009). Musical training shapes structural brain development. *The Journal of Neuroscience*, 29(10), 3019-3025.
- Jensen, I. (2010). Biographical information retrieved from <http://ingridjensen.com/bio.aspx>
- Jorgensen, E. (2003). *Transforming music education*. Bloomington, IN: Indiana University Press.
- Jørgensen, H. (2004). Strategies for individual practice. In A. Williamon (Ed.), *Musical excellence: Strategies and techniques to enhance performance* (pp. 85-103). Oxford, UK: Oxford University Press.
- Jørgensen, H., & Hallam, S. (2009). Practicing. In S. Hallam, I. Cross & M. Thaut (Eds.), *The Oxford handbook of music psychology* (pp. 265-273). New York: Oxford University Press.
- Kempermann, G. (2013). Neuroscience. What the bomb said about the brain. *Science* (340) 6137, pp. 1180-1181.
- Kipling, R. (1902). *The elephant's child and other just so stories*. San Diego, CA: Harcourt Brace Jovanovich.
- Klickstein, G. (2009). *The musician's way: A guide to practice, performance, and wellness*. New York: Oxford University Press.
- Kohler, E., Keyser, C., Umiltà, M. A., Fogassi, L., Gallese, V., & Rizzolatti, G. (2002). Hearing sounds, understanding actions: Action representation in mirror neurons. *Science*, 297, 846-848.
- Kostka, M. J. (2002). Expectations and attitudes: A survey of college-level music teachers and students. *Journal of Research in Music Education*, 50(2), 145-154.

- Kraus, N., & Chandrasekaran, B. (2010). Music training for the development of auditory skills. *Nature Reviews Neuroscience*, 11(August), 599-605.
- Leon-Guerrero, A. (2004). An examination of the self-regulation strategies used by adolescent instrumental musicians while practicing. (Unpublished doctoral dissertation). Northwestern University, Evanston, IL.
- Lim, S., & Lippman, L. G. (1991). Mental practice and memorisation of piano music. *The Journal of General Psychology*, 118(1), 21-30.
- Limb CJ, Braun AR (2008) Neural substrates of spontaneous musical performance: An fMRI study of jazz improvisation. *PLoS ONE* 3(2): e1679. doi:10.1371/journal.pone.0001679
- Little, P., Lewith, G., Webley, F., Evans, M., Beattie, A., Middleton, K.,...Sharp, D. (2008). Randomised controlled trial of Alexander technique lessons, exercise, and massage (ATEAM) for chronic and recurrent back pain. *British Medical Journal*. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3272681/>.
- Locke, E.A., & Latham, G.P. (2002). Building a practically useful theory of goal setting and task motivation. *American Psychologist* 57(9) pp. 705-717. retrieved from <http://faculty.washington.edu/janegf/goalsetting.html>
- Maguire, E. A., Woollett, K., & Spiers, H. J. (2006). London taxi drivers and bus drivers: A structural MRI and neuropsychological analysis. *Hippocampus*, 16(12), 1091-1101.
- Mander, B. A., Santhanam, S. Saletin, J. M., & Walker, M. P. (2011). Wake deterioration and sleep restoration of human learning. *Current Biology* 21(5), pp. 183-184. Retrieved from <http://is.gd/mezuta>.
- Manturzewska, M. (1990). A biographical study of the life-span development of professional musicians. *Psychology of Music*, 18(2), 112-139.
- Manuel, P. (1988). *Popular music of the non-Western world: An introductory survey*. New York: Oxford University Press.
- Marois, R., & Ivanoff, J. (2005). Capacity limits of information processing in the brain. *Trends in Cognitive Sciences*, 9 (6), 296-305.
- Marjoribanks, K., & Mboya, M. (2004). Learning environments, goal orientations, and interest in music. *Journal of Research in Music Education*, 52(2), 155-166.
- Marsalis, W. (n.d.). Retrieved April 27, 2014, from <http://www.brainyquote.com/quotes/quotes/w/wyntonmars168203.html>.

- Maynard, L. (1999). Methods of practice used by high school, college, and professional level string players. *Texas Music Education Research*, 57-63.
- Maynard, L. (1999). Methods of practice used by high school, college, and professional level string players. *Texas Music Education Research*, 57-63.
- Maynard, L., Green, G. A., & Poposki, C. (2002). A comparison of music teachers' and their students' perceptions about student practice versus how they actually practice. *Texas Music Education Research*, May, 2-7.
- McPherson, G. E. (2000). Commitment and practice: Key ingredients for achievement during the early stages of learning a musical instrument. *Bulletin of the Council for Research in Music Education*, 147, 122-127.
- McPherson, G. E. (2005). From child to musician: Skill development during the beginning stages of learning an instrument. *Psychology of Music*, 33(1), 5-35.
- McPherson, G. E., & Davidson, J. W. (2002). Musical practice: Mother and child interactions during the first year of learning an instrument. *Music Education Research*, 4(1), 141-156.
- McPherson, G. E., & Renwick, J. M. (2001). A longitudinal study of self-regulation in children's musical practice. *Music Education Research*, 3, 169-186.
- McPherson, G. E., & Zimmerman, B. J. (2002). Self-regulation of musical learning: A social cognitive perspective. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning* (pp. 327-347). New York: Oxford University Press.
- Midgley, C., Kaplan, A., Middleton, M. J., Maehr, M. L., Urdan, T., Anderman, L. H., . . . Roeser, R. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology*, 32(2), 113-131.
- Miklaszewski, K. (1989). A case study of a pianist preparing a musical performance. *Psychology of Music*, 17, 95-109.
- Miksza, P. (2007). Effective practice: An investigation of observed practice behaviors, self-reported practice habits, and the performance achievement of high school wind players. *Journal of Research in Music Education*, 55(4), 359-375.
- Miksza, P. (2011). Relationships among achievement goal motivation, impulsivity, and the music practice of collegiate brass and woodwind players. *Psychology of Music*, 39(1), 50-67.

- Moskowitz, Clara (2013). Most Earth-like alien planet possibly found. Space.com. Retrieved from <http://www.space.com/19201-most-earth-like-alien-planet.html>, 16 March, 2013.
- Naroditskaya, I. (2003). *Song from the land of fire: Continuity and change in Azerbaijanian mugham*. New York: Routledge.
- Nettl, B., & Russell, M. (Eds.) (1998). *In the course of performance: Studies in the world of musical improvisation*. Chicago: University of Chicago Press.
- New York Philharmonic (2011). Ethan Bensdorf biography and Q & A with Ethan Bensdorf. Retrieved June 2, 2011 from <http://is.gd/relegi>.
- Nielsen, S. G. (2001). Self-regulating learning strategies in instrumental music practice. *Music Education Research*, 3(2), 155-167.
- Nishida, M., Walker, M. P. (2007). Daytime naps, motor memory consolidation, and regionally specific sleep spindles. *PLoS ONE* 2(4): e341. DOI:10.1371/journal.pone.0000034
- Oerter, R. (2003). Biological and psychological correlates of exceptional performance in development. In G. Avanzini, C. Faienze, D. Minciocchi, L. Lopez & M. Majno (Eds.), *The neurosciences and music: Annals of the New York Academy of Sciences* (pp. 451-460). New York: New York Academy of Sciences.
- Overy, K. & Molnar-Szakacs, I. (2009). Being together in time: Musical experience and the mirror neuron system. *Music Perception*, 26(5), 489-504.
- Pascual-Leone, A. (2001). The brain that plays music and is changed by it. *Annals of the New York Academy of Sciences*, 930 (June), 315-329.
- Parncutt, R. (1993). Prenatal experience and the origins of music. In T. Blum (Ed.), *Prenatal perception, learning, and bonding*, 253-277. Leonardo: Berlin.
- Pulli, K., Karma, K., Norio, R., Sistonen, P., Goring, H. H., & Jarvela, I. (2008). Genome-wide linkage scan for loci of musical aptitude in Finnish families: Evidence for a major locus at 4q22. *Journal of Medical Genetics*, 45, 451-456.
- Raja, D. (2005). *Hindustani music: A tradition in transition*. New Delhi, India: DK Printworld.
- Ramachandran, V. (2009). The neurons that shaped civilization. TED talk. Retrieved from http://www.ted.com/talks/vs_ramachandran_the_Neurons_that_shaped_civilization.html

- Reimer, B. (2003). *A philosophy of music education: Advancing the vision* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
- Reimer, B. (2009). *Seeking the significance of music education: Essays and reflections*. New York: Rowman & Littlefield.
- Reimer, B., & Wright, J. E. (Eds.). (1992). *On the nature of the musical experience*. Niwot, CO: University Press of Colorado.
- Richards, K. (2012). *Life*. New York: Little, Brown.
- Rizzolatti, G., & Craighero, L. (2004). The mirror-neuron system. *Annual Review of Neuroscience*, 27, 169-192.
- Rohwer, D., & Polk, J. (2006). Practice behaviors of eighth-grade instrumental musicians. *Journal of Research in Music Education*, 54(4), 350-362
- Rosenthal, R. K. (1984). The relative effects of guided model, model only, guide only and practice only treatments on the accuracy of advanced instrumentalists' musical performance. *Journal of Research in Music Education*, 32(4), 265-273.
- Ross, S. L. (1985). The effectiveness of mental practice in improving the performance of college trombonists. *Journal of Research in Music Education*, 33(4), 221-230.
- Rothenberg, A. (2011). Janusian, homospatial, and sequential articulation processes. In Runco and Pritzker (Eds.), *Encyclopedia of Creativity*. Waltham, MA: Academic Press.
- Rubin-Rabson, G. (1940). Studies in the psychology of memorizing piano music: III. comparison of the whole and the part approach. *Journal of Educational Psychology*, 31, 460-475.
- Rubin-Rabson, G. (1941a). Studies in the psychology of memorizing piano music: IV. The effect of incentive. *Journal of Educational Psychology*, 32, 45-54.
- Rubin-Rabson, G. (1941b). Studies in the psychology of memorizing piano music: V. A comparison of pre-study periods of varied length. *Journal of Educational Psychology*, 32, 101-112.
- Rubin-Rabson, G. (1941c). Studies in the psychology of memorizing piano music: VI. A comparison of two forms of mental rehearsal and keyboard over learning. *Journal of Educational Psychology*, 32, 593-602.
- Rubin-Rabson, G. (1941d). Studies in the psychology of memorizing piano music: VII. A comparison of three degrees over learning. *Journal of Educational Psychology*, 32, 688-696.
- Sams, E. (1971). Schumann's hand injury. *The Musical Times*, 112(1546), pp. 1156-1159.
- Schlaug, G., Jäncke, L., Huang, Y., Staiger, J. F., Steinmetz, H. (1995). Increased corpus callosum size in musicians. *Neuropsychologia*

- 33(8), 1047-1055.
- Shankar, R. (2012). On appreciation of Indian classical music. Retrieved from http://www.ravishankar.org/indian_music.html.
- Shenk, D. (2011). *The genius in all of us: New insights into genetics, talent, and IQ*. New York: Anchor.
- Simmons, A. L., & Duke, R. A. (2006). Effects of sleep on performance of a keyboard melody. *Journal of Research in Music Education*, 54(3), 257-269.
- Simonton, D. K. (2007). Talent and expertise: The empirical evidence for genetic endowment. *High Ability Studies*, 18(1), 83-84.
- Sloane, K. D. (1985). Home influences on talent development. In B. S. Bloom (Ed.), *Developing talent in young people* (pp. 439-476). New York: Ballantine Books.
- Sloboda, J. A. (1996). The acquisition of musical performance expertise: Deconstructing the "talent" account of individual differences in musical expressivity. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sport and games* (pp. 107-126). Mahwah, NJ: Lawrence Erlbaum and Associates.
- Sloboda, J., Davidson, J. W., Howe, M., & Moore, D. G. (1996). The role of practice in the development of performing musicians. *British Journal of Psychology*, 87(2), 287-309.
- Sloboda, J. A., & Howe, M. J. A. (1991). Biographical precursors of musical excellence: An interview study. *Psychology of Music*, 19, 3-21.
- Smith, B. P. (2005). Goal orientation, implicit theory of ability, and collegiate instrumental music practice. *Psychology of Music*, 33(1), 36-57.
- Sosniak, L. A. (1985). Phases of learning. In B. S. Bloom (Ed.), *Developing talent in young people* (pp. 407-438). New York: Ballantine Books.
- Sosniak, L. A. (1987). The nature of change in successful learning. *Teachers College Record*, 88(1), pp. 519-535.
- Sosniak, L. A. (1990). The tortoise, the hare, and the development of talent. In M. Howe (Ed.), *Encouraging the development of exceptional skills and talents* (pp. 149-164). Leicester, UK: BPS Books.
- Sosniak, L. A. (2006). Retrospective interviews in the study of expertise and expert performance. In K. A. Ericsson, N. Charness, P. J. Feltovitch & R. R. Hoffman (Eds.), *The Cambridge handbook of expertise and expert performance* (pp.

- 287-301). New York: Cambridge University Press.
- Sternberg, R. (1998). Abilities are forms of developing expertise. *Educational Researcher*, 27(3), 11-20.
- Stickgold, R., & Walker, M. P. (2005). Memory consolidation and reconsolidation: What is the role of sleep? *TRENDS in Neurosciences*, 28(8), 408-415.
- Stravinsky, I. (1998). *An autobiography: A witty account by the celebrated composer*. New York: W. W. Norton & Company.
- Terkel, S. (1985). *Working: People talk about what they do all day and how they feel about what they do*. New York: Ballantine.
- Tharp, T., Reiter, M. (2006). *The creative habit: Learn it and use it for life*. New York: Simon and Schuster
- Theiler, A. M., & Lippman, L. G. (1995). Effects of mental practice and modeling on guitar and vocal performance. *Journal of General Psychology*, 122(4), 329-343.
- Thomas, L. (1974). *The lives of a cell: Notes from a biology watcher*. New York: The Viking Press.
- Trainor, L. J. (2005). Are there critical periods for musical development? *Developmental Psychobiology*, 46(3), 262-278.
- Trehub, S. E., & Trainor, L. J. (1993). Listening strategies in infancy: The roots of language and musical development. In S. McAdams & E. Bigand (Eds.), *Cognitive aspects of human audition* (pp. 278-327). London: Oxford University Press.
- Trope, Y. & Liberman, N. (2010). Construal-level theory of psychological difference. *Psychological Review*, 117(2), pp. 440-463.
- Twain, M. (1869). *The innocents abroad: The new pilgrims' progress*. Hartford, CT: American Publishing Company.
- Upasani, P. (2012). Biographical information retrieved from http://upasani.org/home/About_Me.html
- Upasani (2013). Information page on the Apple store. Retrieved from <http://is.gd/ewacol>.
- Vaswani, J. P. (2008). *The perfect relationship: Guru and disciple*. New Delhi, India: Sterling Publishers.
- Vygotsky, L. (1978). *Mind in Society*. Cole, John-Steiner, Scribner, & Souberman (Eds.). Cambridge, MA: Harvard University Press, pp. 85-86.
- Walker, M. P. (2006). Sleep to remember. *American Scientist*, 94, 326-333.
- Westney, W. (2003). *The perfect wrong note: Learning to trust your musical self*. Pompton Plains, NJ: Amadeus Press.
- Winner, E. & Drake, J. E. (1996). The rage to master: The decisive

- case for talent in the visual arts. In K. A. Ericsson (Ed.), *The road to excellence: The acquisition of expert performance in the arts and sciences, sports and games* (pp. 271-301). Hillsdale, NJ: Erlbaum.
- Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Child Psychiatry*, 17, 89-100.
- Wood, D., & Middleton, D. (1975). A study of assisted problem-solving. *British Journal of Psychology*, 66(2), 181-191.
- Wright, B. A., Sabin, A. T., Zhang, Y., Marrone, N., & Fitzgerald, M. B. (2010). Enhancing perceptual learning by combining practice with periods of additional sensory stimulation. *The Journal of Neuroscience*, 30(38), 12868-12877.
- Xie, L., Kang, H., Xul, Q., Chen, M. J., Liao, Y., Thiyagarajan, M., O'Donnell, J., Christensen, D. J., Nicholson, C., Iliff, J. J., Takahiro, T., Dean, R., Nedergaard, M. (2013). Sleep drives metabolite clearance from the adult brain. *Science*, 342 (6156), pp. 373-377, retrieved from <http://www.sciencemag.org/content/342/6156/373.full>.
- Yeo, D. (2014). Ed Kleinhammer: A life and legacy remembered. *International Trombone Association Journal*, 42(2), pp. 24-31.
- Zdzinski, S. F. (1992). Relationships among parental involvement, music aptitude, and musical achievement of instrumental music students. *Journal of Research in Music Education*, 40(2), 114-125.
- Zdzinski, S. F. (1996). Parental involvement, selected student attributes, and learning outcomes in instrumental music. *Journal of Research in Music Education*, 44(1), 34-48.
- Zhao, D., Zhang, Q., Fu, M., Tang, Y., Zhao, Y. (2010). Effects of physical positions on sleep architectures and post-nap functions among habitual nappers. *Biological Psychology* 83(3), pp. 207-213.
- Zuckerman, A. (2010). *Music*. New York: Abrams.
- Zurcher, W. (1975). The effect of model-supportive practice on beginning brass instrumentalists. In C. K. Madsen, D. R. Greer & C. H. Madsen (Eds.), *Research in music behavior: Modifying music behavior in the classroom* (pp. 131-138). New York: Teachers College Press.

GET BETTER FASTER

The best book on practice I've never read! Read it!

~ local citizen, expert

Talent means almost nothing when it comes to getting better at music. Practice is everything. But exactly what *is* good music practice? How does good practice create talent? And what does a pinwheel have to do with practice?

This book covers essential practice strategies and mindsets you won't find in any other book on music practice. You'll learn the *What, Why, When, Where, Who*, and especially the *How* of great music practice. You'll learn what research tells us about practice, but more importantly, you'll learn how the best musicians in many genres of music *think* about practice, and you'll learn the strategies and techniques they use to improve. This book will help you get better faster, whether you play rock, Bach, or any other kind of music.

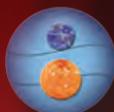
Whatever instrument you want to play, *The Practice of Practice* will help you become a more aware musician, a more informed teacher, and a more effective parent of a young musician.

Be a better musician. Don't practice longer, practice smarter.

JONATHAN HARNUM is a multi-instrumentalist with over 30 years of experience practicing, performing, and teaching music. Harnum earned a PhD in music education at Northwestern University, and is the author of five music-related books.



EXTRA
CONTENT
ONLINE



SOL UT PRESS
www.sol-ut.com