Excerpted from Journey to Excellence by Henry Brunton

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THE ART OF PERFECT PRACTICE

If someone were to design the ideal golfer they would include a number of traits held by nearly all the top players. First would be the ability to hit the ball long and straight. Many things go into playing good golf, but being able to bang the ball a long way down the fairway means you are playing offense instead of defense. Next would come putting. A long drive and a mid-iron to 10 feet only pays off if you can roll in the 10-foot birdie putt at least some of the time; and those four footers for par count just as much. The ideal golfer would play with great tempo and rhythm, allowing them to master all the crafty in-between shots inside 100 yards that scoring requires. Great tempo and rhythm set apart the merely good players from the great.

You'd want all these things—power, touch, and a sense of calm under pressure. But more than anything you'd want a healthy dose of myelin. If you've never heard of myelin, you shouldn't worry. It's not something you can buy at a pro shop or a drugstore or even read about in a golf magazine. But people who study the brain, and in particular how the brain works as we learn new skills, believe myelin is the magic that enables talent to develop. So what am I talking about? Myelin is a sheath of fatty tissue that coats nerve fibers in the brain. Think of it like rubber insulation surrounding a copper wire. Myelin preserves the strength of electrical impulses that travel along the copper wire, or nerve fiber.

What does this have to do with golf? Or with playing piano or chess or tennis or any other activity that requires a lot of time and patience to master? The general theme is that when we're trying to do something difficult, like serve a tennis ball or make a good golf swing, the impulses in the brain that control the action are many and varied. The key to making the swing we want is to have the signals "travel at the right speed [and] arrive at the right time," says Dr. Douglas Fields, one of the world's leading experts in developmental neurobiology. In other words, if you're trying to hit a soft 9-iron downwind and your brain sends the signal to hit a regular 9-iron, you've just earned yourself a bogey, maybe worse.

And the difference between your brain sending the signals correctly and something going slightly wrong takes place in the time it takes a fly to flap its wings. Now here's the best part: the interesting thing about myelin is that its insulating qualities improve—it actually gets thicker—the more often the nerves it surrounds are called into action. And the thicker it gets, the more precisely the brain's signals travel, arriving at their destination at the proper time and in the proper sequence. In other words, the more myelin you have in the right parts of the brain, the better your chances of your soft 9-iron one-hopping to five feet below the hole.

And the most important thing about myelin? The more you practice, the more you get.

Any serious golfer is familiar with practice. It is fair to say that no one has ever achieved any reasonable proficiency in the game without working at it. But there is practice, and there is proper practice. There is going to practice because it's time to go to practice, and there is going to practice so engaged in what you are doing that nearly every moment is used to further perfect the skills you are trying to master. The old line about practice making perfect is a mistake. Practice makes permanent. Perfect practice makes perfect. And myelin: "What do good athletes do when they train? They send precise impulses along wires that give the signal to the myelin on that wire," says Dr. George Bartzokis, a professor of neurology at UCLA. "They end up, with all the training, with a super-duper wire—lots of bandwidth, a high-speed T-1 line. That's what makes them different than the rest of us."

Anders Ericsson, a professor of psychology at Florida State University is one of the world's leading experts on skill acquisition. He has spent most of his academic career studying practice and expert performance across many different activities (sports, music, chess, medicine) to learn why some people learn how to do things better than others and what the best way is to teach them. And while truly talented people can seem magical when compared to ordinary folk—anyone who has seen professional golfers in person usually can't help but be amazed at how good they are compared to even respectable recreational players—Ericsson says even the very best golfers or musicians can trace their success to deliberate practice aimed at mastering a specific task or groups of tasks.

What is deliberate practice? Ericsson defines it this way: "Being engaged in activities specifically designed to improve performance with full concentration."

And this is the part that separates those who dream about being a world class competitor in golf or any other sport from those who plan on it: Ericsson's research shows that it takes about 10 years or more of intense practice and training in a particular area to reach a level where you will be able to compete on a national or international level.

And consider this, according to Dr. Ericsson's research:

- Experts engage in deliberate practice for about four or five hours per day. And don't think that you can roll out of bed tomorrow, practice for four hours and be on your

way. It takes time—and practice—to develop the ability to sustain the concentration required for deliberate practice. It's not just time, it's quality time.

- Once you accept the challenge of increasing the intensity, volume and quality of your practice, you accept another challenge: finding the proper balance between strain and rest as you pursue the limits of your performance.
- Despite best intentions, most people never reach their potential athletically or in other areas because they don't ever understand the highly refined, intense and deliberate practice approach required for elite performers.
- And practice doesn't stop. Putting in 10 good years of work from age 12 to age 22 might make you a solid college golfer or even a national or international level performer, but it guarantees little after that. All that work doesn't mean you can coast into future success. With some work, you can maintain that level, but to continue to improve, you need to continue the dedication to the practice that got you to that level in the first place.

So the challenge has been laid out in plain terms: Great golf—or at least the best golf you are capable of playing, doesn't come by accident. It doesn't happen because you really like to golf and play as often as you can. Reaching your potential requires a plan. The good news is you can make your next practice better than your last almost instantly. Heading out the door this afternoon? Here are a dozen tips to maximize your next practice:

1. Don't hit too many balls. This might sound strange, but hitting more balls can hurt, rather than help. If you find yourself 'raking and hitting,' simply lining up the next shot as soon as you hit the last, it's probably time to leave. Work with a goal in mind—developing a nice rhythm with your wedges, for example—and leave on a high note. Don't keep hitting until you are tired, sore and frustrated.
2. Practice the way that suits you. Golf is an individual sport; there is no single way to learn new skills. If you are working on refining a new shot, emphasize technique. If you are maintaining an existing skill, emphasize a creative approach. Find the balance between drills and playing that works for you, not someone you know.
3. Practice for the right reasons. Practice is an enjoyable time used to learn or maintain skills. It is not something you do to punish yourself for poor play, relieve guilt, or to please someone else. For the best players, practice is a privilege and a pleasure they enjoy returning to time and time again.
4. That which is measured, can be improved. Are you getting better? Maybe your scores don't say so yet, but by keeping a journal to track your performance in practice you can see your progress, gain confidence and take that confidence to the course. Lower scores will follow.

5. Resist over practicing. Are you getting injuries or strains? Does going to practice feel like a duty? If it does, you're focused on results, "I want to shoot a good score," rather than process, "I'm going to focus on hitting good shots," and you might be practicing too much. Don't be afraid to take a break.
6. Resist under practicing. Are you playing poorly? Are you having trouble with your touch, timing and tempo? Do you tee it up feeling like you don't really deserve to perform your best? You might not be practicing enough.
7. Practice like you play. Use your imagination to put yourself in tough, competitive situations (leading your arch rival by a shot with a hole to play at your favorite tournament) and then practice your mental routine to help you hit confident shots or putts under pressure.
8. Play like you practice. Remember the way you felt while having an exceptionally good recreational round—were you relaxed, chatty, focused, yet loose? Whatever the case, challenge yourself to behave in competition the same way you do when you are practicing well.
9. Don't be boring! Golf requires a lot of thought and deliberation, but you are an athlete too. Spend some time in practice doing athletic things. Don't be afraid to tap into your 'right' brain or creative, athletic side while training. Examples might include challenging yourself to hit 'improvised shots' around, over or under obstacles. Get into competitive practice games with friend. Use the same club to hit different shots, etc. Create practice situations where you have to react, not think.
10. Separate mental practice from physical practice. There are times in practice when you need to be very deliberate and thoughtful. Those are times when you're working on honing fundamentals or doing drills to capture a specific technique. Other times, you might be focusing on the athletic or completive side of the game—developing your pre-shot routing, tempo, visualization, feel, etc. Both are equally important, but don't try to work on them at the same time.

You might be asking yourself about now if your practice routine is even close to what it needs to be. If your practice doesn't require your full attention, if you rarely use a pre-shot routine, if you hit balls the same distance with the same club or stroke putts from the same distance over and over again and hit all your shots from good lies, you probably need to improve your practice approach. This kind of session is all too common (ball-beating is the slang term) and will make you only a pretty good practice range player but is no way to prepare you to be a polished competitive golfer. The goal of practice is to learn new skills, master them and, most importantly, transfer them to the golf course under competitive conditions. The best way to do that is to practice in a way that reflects how you play. A good practice isn't judged by how well you can

hit a 7-iron off a perfect lie. A good practice means you focused on each shot; you simulated a live round in little ways, like switching clubs between shots, or hitting different yardages with the same club, or hit out of less-than-perfect lies and didn't turn to a coach after every shot but rather learned how to analyze your own performance. After all, there are no coaches on the 18th fairway when you need to make par to save a one-shot lead, are there?

Obviously all this hard work requires a significant commitment. But does it work? Does proper practice produce elite performance? Of this there is no guarantee. After all, an elephant can practice all it wants, it's never going to be a giraffe. "In sport, deliberate practice is often not enough to ensure success," notes Dr. Janet Starks, the chair of the department of kinesiology at McMaster University and a leading researcher in expert performance. "There are factors of character, of luck, of the environment and of avoiding injury that inevitably affect the outcome of competitions. These factors are one reason why sports are so interesting to perform and watch; you just never know." What is guaranteed is that, while deliberate practice won't automatically make you an elite golfer, failing to learn how to practice properly will ensure that you will never reach your ultimate playing potential, whatever that might be. There are many examples that prove the point.

But as an example of what deliberate practice can do, consider the recent rise to prominence of female golfers from South Korea. When Se Ri Pak burst onto the LPGA scene in 1998 by winning two major championships as a rookie on the way to a hall-of-fame career, the only thing as surprising as her game was her nationality. There were only five South Koreans on the LPGA Tour the season before Pak made her debut. Ten years later, there were 45 South Korean women playing on Tour while 33 played in the 2007 U.S. Women's Open, earning more than 20% of the 156 spots available. This despite taking up the game in a country the size of Indiana with less than 250 golf courses for 49 million people. And it's not like the South Korean climate is ideal for the game—it can be bitterly cold in winter and impossibly wet in summer. Pak estimates that the playing season lasts about two months a year. In any case, it's not like anyone can just get a tee time anyway—golf is expensive and many clubs are private.

So how to explain the rush to success in North America? One is the example Pak set. By winning two major championships weeks apart in 1998, Pak became a massive celebrity in South Korea inspiring a generation of South Korean girls to take up the sport. According to Dr. Ericsson's research, you could expect that it would a take a decade before the full impact was felt, as thousands of hopeful girls began working on their skills. Sure enough, the number of South Koreans on the LPGA jumped from five the year before Pak's rookie season to 45 in 2007. Strangely enough, part of the reason for their success may be because they have such a difficult time getting on a golf course. The lack of access means more time is spent on the multi-level driving ranges that dot the country, practicing with a focus on fundamentals.

"We grew up that way," Pak says. "The culture says that's the way you play golf. Here [in North America] you can [play] all the time because of the courses available. It's not that way in Korea." And all that focused work? It goes a long way to developing myelin—the magic that helps make champions.

Practice and the Stages of Development

Practice means different things at different stages of a player's development.

In studies concerning the development of elite athletes, renowned sports science researcher Dr. Jean Côté, Professor and Director of the School of Kinesiology and Health Studies at Queen's University, found that there were clear patterns that emerged. He identified three stages of sport development from childhood to late adolescence as the Sampling Years (ages 6-12); the Specializing Years (ages 13-15); and the Investment Years (age 16 and up).

The Sampling, Specializing and Investment years are differ-entiated by, and based on, the amount of the participant's deli-berate practice (structured formal training) and deliberate play (neighborhood play using the general rules of the game without being an organized league), i.e., pick-up basketball.

THE SAMPLING YEARS: AGES 6-12

The Sampling Years are characterized by a low frequency of deliberate practice and a high frequency of deliberate play. Simply, athletes in this stage develop most effectively when they are provided with the opportunity to play informal games for hundreds of hours (deliberate play). In these games and activities, the players can use their creativity to modify the rules of the sport to suit the situation. They require very little structured practice and drills (deliberate practice) led by coaches or parents.

Golf should be introduced to children who show interest in the sport when they are in the Sampling Years. It should be one of several activities that they explore. Ideally, children interested in the sport should participate in an organized golf skills development program that is fun and appealing. This program should be conducted by an individual trained in junior golf coaching. Children at this stage need to gain as much experience as possible by playing the game. They should be taught the basic fundamentals and then given the opportunity to play the sport. There should be little concern for competing in organized tournaments at this stage.

THE SPECIALIZING YEARS: AGES 13-15

In the development of elite athletes, an important transition point occurs at approximately age 13 when the athletes begin secondary school. They reduce their involvement in other sports, and begin to compete at the regional or national level in their primary sport.

The Specializing Years mark a transition in which athletes gradually decrease their involvement in various extracurricular activities and focus on one or two sporting activities. While fun and excitement remained central elements of the sporting experience, sport-specific development emerged as a characteristic of the child's involvement.

The research suggests that if a child is passionate about golf, and has the desire and aptitude to potentially advance as an elite level player in golf, then at the age of about 13, he should make golf one of

his ‘top two’ sports. He should align himself with a professional coach who is trained and specializes in developing competitive players. He should develop peer group relationships with other athletes who have the same interests. He should practice, play and compete in the same fashion as other top aspiring high performance athletes in all sports.

Elite golfers should follow periodized annual plans and be aware of and respect the recommended practice-to-competition ratios.

In the specializing years, athletes need to shift to approximately equal amounts of deliberate play and deliberate practice. They need to learn effective practice habits and training regimens.

INVESTMENT YEARS: AGE 16 AND UP

As elite athletes continue to develop, another transition point occurs at approximately age 16. This is when athletes make a decision to be elite athletes and consequently invest most all of their leisure time into training and competing.

In this stage, the child becomes committed to achieving an elite level of performance. These athletes are focused on their chosen sport and usually one or two additional off-season sports or activities.

If an athlete is committed to developing his skills as an elite level golfer, he should make golf his primary sport by age 16. He or she should train and compete in a professional fashion under the guidance of a highly-trained golf coach who specializes in player development. He or she should be enrolled in an Olympic-type coaching, training and development program with other like-minded athletes, if possible.
At this level, the golfer should invest the vast majority of his free time to developing his skills as an aspiring elite level golfer. He should be engaged in deliberate practice activities for three to five hours per day in addition to competing and playing the game.

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