

Choke—What the secrets of the brain reveal about getting it right when you have to.

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Chapter 1: the curse of expertise.

- For instance, the more experience you have as a leader of your company, the worse your ability to manage your team members can become. More experience, worse performance. This seems crazy, but I can back up my claim with actual research.
- How could it be the case that experts perform like novelists? Well, something interesting happens as people get better and better at performing a skill— and this occurs whether we are talking about programming a cell phone, riding a bike, or parallel parking in city traffic. They forget stuff.
- We become more expert and our procedural memory grows, but we may not be able to communicate our understanding or help others learn that skill.
- As I've written above, our memory (and the tasks we engage in) can roughly be divided into explicit and procedural forms.
- Rooted in the prefrontal cortex, working memory reflects our ability to hold information in memory in the short-term, but it's more than just storage on the computer's hard drive. Working memory involves the ability to hold information in mind (and protect that information from disappearing) while doing something else at the same time. For instance, working memory is in play when you're trying to remember the address of the restaurant you are heading to while at the same time reading a text from the friend your meeting up with for dinner. Why did we care about the students working memory? Several studies have shown that working memory differences across people account for between 50%-70% of individual differences in abstract reasoning ability of fluid intelligence. In short, working memory is one of the major building blocks of IQ.
- A person might be asked to read—out loud—the following sentences one at a time on the computer:
 - On warm sunny afternoons, I like to walk in the woods. F
 - The farmer drove the grape to the sleeping bear? E
 - The Rangers saw the eagle in the sky? D
 - The man thought the light was nice after dinner train? R
 - After work, the woman always go for lunch? B
- After reading each sentence, people are told to report whether the sentence makes sense and then to read the letter out loud at the end of the sentence. Then the sentence and the letter disappear from the screen and the next sentence letter pair appears. Deciding whether the sentences are sensible is simple: the first sentence make sense and the second one does it. But this part of the test is red herring: we are not so interested in how the test takers perform on the sensibility part of this task. What we want to capture is people's ability to remember the letter at the end. After a number of sentence letter pairs (usually somewhere between three and five, we asked folks to recall all the letters that came at the end of the sentences they read and to do so in the same order which they initially saw them, in our example F, E, D, R, B. people know they're going to have to recall the letters from the outset, but they don't know when the recall task is coming. So people must maintain the letters at the end of the sentences in memory while making sensible judgments

about what they are reading. Holding information in memory while doing something else at the same time gets the heart of working memory.

- In the amount of working memory that you have often predicts how well you will perform in activities imperative for academic success, such as reading comprehension or problem-solving.
- Low powered students also panicked, but because the usual shortcuts don't require a lot of effort (remember, they are essentially no more than good guesses), they stuck with them in their performances didn't drop under stress.
- But when students are taking demanding tests or when people find themselves in situations where they have to reason through a novel problem, giving the cognitive horsepower time to percolate can be beneficial.
- In the early 1980s, psychologist Micki Chi and her research team found that one big difference between students who succeeded and those who failed in difficult problem solving situations was the time that they spent thinking about a problem at the outset—before they actually attempted to solve it. Jumping in at full speed can negatively affect your success.
- Pausing to assess the situation before starting to solve a difficult problem is one way to ensure success, especially if your first inclination is to look for the quickest and easiest way out.
- If the VPs were to behave more like the physics professors and the PhD's than the undergraduates, this would help them find the best answer to the questions posed to them, especially when they were under pressure. In fact, even walking away from a problem for a few minutes can help folks find the most appropriate solution. This “incubation” period helps people to let go of their focus on the relevant problem details and instead think in a new way or from an alternate perspective—producing an Aha moment that can ultimately lead to success.
- The legendary Greek philosopher, Archimedes, may have been the first person to demonstrate the power of taking a step back. Asked to determine whether a new crown made for King Harrow the second was solid gold, Archimedes is under a lot of pressure to come up with the answer. He wouldn't have lost a college admission or toward them in title if he had failed, but there was a good chance he would have lost his life. Obviously Archimedes couldn't melt down the crown or break it open to determine its contents because that would destroy the crown. And because the crown was in the irregular shape there was no object of a similar shape in which to compare it. Having puzzled over the problem of the crown, he did not find the answer until he stepped back from his task and stop thinking about it altogether. As Archimedes was getting into the bath one day, he noticed that the level of water rose as he got in. He figured out that he could use the amount of water displaced by an object (either himself or the crown) to determine its volume. It was then an easy leap to divide the weight of the crown by its volume to come up with its density—which could help determine whether the crown had dense gold or less dense silver inside.
- Even practicing under mild levels of stress can prevent you from choking when high levels of stress come around.

Chapter 2: training success.

- Practice can actually change the physical wiring of the brain to support exceptional performance.
- Despite innate differences, our eventual levels of success is markedly affected by training and practice.

- The older child is relative to his peers in soccer, the greater the probability this child has of eventually becoming an elite player.
- For instance, it's common today for a 10-year-old baseball pitcher to need tendoned replacement surgeries for an injured elbow— these are previously restricted to college at major league pitchers.
- Findings like the birthplace affect suggest that we need to rethink the growing trends for kids to receive year-round training in one sport early on. Instead, less sport specific training and more diverse recreational play seem to be preferential for developing athletic ability and expertise.
- If everyone at the table ordered a salad— one person asked for rent stressing, another Italian and the third thousand island, and the fourth vinaigrette— JC would remember RITV. JC developed a mnemonic for the dressings that place less demand on his memory than having to remember each dressing separately. Just as seeing nine separate pieces on the chessboard as part of one meaningful attack sequence allows a Chess Master to turn many pieces of information into one, JC created patterns for dinner orders that helped him paired down a lot of information bits into one manageable groups.
- Group pieces of information into bundles to help you remember them.

Chapter 3: less can be more, by flexing your prefrontal cortex is not always beneficial.

- As we saw in Chapter 2, the merits of training and practicing our well-funded. Nonetheless, even though a good education has undeniable benefits, you have to wonder just how much environment influences success. Like Sarah's parents, some people spend thousands of dollars to move to affluent neighborhoods so that their children can attend good public schools, others pay high tuition for top-notch private schools. Not everyone can afford to live in the right school district or pony up for private school money, however, and as a result, different kids grow up getting educations of varying quality. If educational experience were the sole predictor of academic accomplishment, we would expect that Sarah would beep off to a top Ivy League university once she graduated from Piedmont, while the friends she left behind in Oakland would be attending far less prestigious schools. This is not what happened. After high school, Sarah went to a state university, which is less academically rigorous than institutions such as Stanford and UC Berkeley, where several of her Oakland pals attended. So, environmental influences don't explain everything. Just as some people are tall and some short, we also vary in the cognitive abilities with which we are innately endowed. This variation—in addition to our surroundings— can influence the academic path we are likely to take. It's important to point out, however that although Sarah never performed at the top of her Piedmont class academically or went to the best universities, this didn't adversely affect your ultimate career success. Today Sarah is in her mid-30s and the successful businesswoman, a cofounder and CEO of a predominant technology centered advising agency based in the San Francisco bay area. Her agency is often lauded for its creative campaigns and out-of-the-box advertising styles and has more work than it is able to handle. I almost any metric, Sarah is indeed a success.
- People who speak two languages from a very young age have a level of second language proficiency that, on average, far surpasses that of people who begin to study a language later in life—the matter how hard they hit the language books as adults. One of the reasons kids may be so good at picking up languages is a cognitive horsepower develops with age. Because children

have lower working memory capabilities than adults, this actually aids in their equestrian of a foreign language.

- Researchers Alan Kersten and Julie Earles has shown that adults learning a made-up language learning word meaning and word role use better when they are initially presented with only individual words and then later with more complex sentences. Adults do learn less well when they are introduced to all the complexities of the language from the outset. Small segments allow the adults to process the language as if they're working memories were not more limited in the first place, as if they were under the same prefrontal developmental constraints as children, and this in turn helps them learn language more quickly.
- Psychologists at Louisiana State University seem to have found some clues for doing this, at least for language learning. Adults are better at acquiring a new language—that is, adults look more like kids with underdeveloped prefrontal cortex is— when they are distracted and not concentrating too hard on what they are learning. This research taught college students a modified form of American Sign Language in which the students learn to sign simple sentences first.
- Indeed, there is some exciting new work that shows that cognitive horsepower or working memory— once thought to be an immutable trait that was completely heritable in origin, can be altered with the right type of brain practice.
- Michael Posner, a neuroscientist at Sackler Institute in New York who has spent most of his academic career studying the concept of attention, recently found some interesting ways to train brain power in normal children in order to enhance their learning and performance in school.
- Posner and his colleagues asked kindergarten kids to do things like learn how to use a joystick to control the movement of an animated object on the computer screen and predict where the object might go given its initial trajectory. Many of these tasks were patterned after those once used to gear up rhesus monkeys in the United States and Russia for space travel. Each exercise the kids did progressed from easy to more difficult so that the children were pushed to expand their attention and memory skills with practice.
- Admittedly, not everyone has access to the types of sophisticated training regimens that Michael Posner used to help folks strengthen the cognitive horsepower. The good news is that you can flex your working memory in several different ways. Playing action video games, for example, can improve your brainpower. That's right, spending several hours a week playing games like grand theft auto, half-life or halo improves core cognitive abilities that extend well beyond the computer screen.
- After playing Medal of Honor an hour a day for 10 days, college students showed improved memory and attention abilities on a number of different tasks. Importantly, people improved even on tasks that they had not directly practiced. The better that people got a medal of honor, the more attention and memory skills outside the game skyrocketed.
- So parents, before you take away your kids Nintendo DS away for good, you might want to think about the potential benefits of some videogame play. Keep in mind, however, that these benefits occurred after only an hour of play a day. Eight hours a day, every day, will likely have diminishing returns on the upping cognitive horsepower.
- After a mere 10 hours of gameplay, an hour a day spread over 10 days, the cadets showed almost 30% improved an actual fight performance.

Chapter 4: brain differences between the sexes. A self-fulfilling prophecy?

- Merely highlighting the possibility of a boy girl imbalance was enough to negatively affect female student scores—and knees were female students at top public university.
- When they looked a bit more closely at the data, she found that this boy-girl gap in spatial ability only occurred for those kids whose families brought in the most money on an annual basis. But the boy and the girls from the poorest families performed equally badly.
- Although the researchers are still working to uncover all the possible reasons for their findings, they think they may have a clue— and it stems from boys and girls opportunities for spatial play. As it happens, activities like playing with Legos, putting puzzles together, exploring one surroundings, and even playing video games can help kids develop spatial skills, but there are differences between the sexes and the classes in who engage in this type of play.
- Take Legos as an example. A majority of the Legos sold in the United States each year are intended for boys, but because Legos are expensive, neither lower-class boys nor girls see much of them. So boys from the middle and upper class families get to hone their spatial skills through playing with Legos in a way that girls and kids from lower-class families do not.
- Young boys are also usually allowed to navigate further from home than girls, yet a kid has much more freedom to explore his surroundings and develop spatial skills when he lives in the middle or the upper class neighborhood where it is safe to wander away. In short, there is ample evidence that the differences in boys and girls spatial abilities— at least by early elementary school—are largely dictated by the experiences these kids have. And it just so happens that the wealthier environments offer more opportunities for boys and girls to go down different paths.
- In recent years there has been a push to highlight the difficulties boys have in the classroom and a good deal of evidence has been brought to the forefront that boys do sometimes underperform girls—especially at the elementary school levels.

Chapter 5: bombing the test. Why we choke under pressure in the classroom.

- In one study, Ashcraft began by having college students do simple addition problems in their head like “ $7+9=?$ Or $16+8=?$ ” Pretty easy. But then he made things a bit more interesting. Ashcraft asked the students to do more problems, but this time the students were given six random letters (such as blfmcx) to hold in memory what I figured out the math answers. After solving a math problems, the students repeated back the letters they were holding in mind to an examiner sitting next to them. Everyone is pretty good at doing the math task on its own. It is fairly simple addition and these are college students, after all. But when they had to perform both the addition task and the letter memory task together, math performances were not as good. Doing two things at once is usually harder than doing one thing at a time, so Ashcraft’s results were not surprising, but the students who were highest in math anxiety showed the most math errors when they solved both the problem and holding letters in their mind.
- Merely rewriting a math problem in a format more conducive to spatial problem-solving could take some of the load off verbal brain resources, which in turn might limit the damage that worries can do. As an example, rather than doing even fairly simple arithmetic in your head, rewrite the problem vertically to create better spatial resources.
- This is good news, especially for student about to do a problem at the board in class, and even for you when you find yourself in a highly stressful situation—say, when you are getting ready to give a big speech or negotiate an important business deal. If you can manage to interpret your

body's response to the situation as positive, as a call to action, you are likely to thrive. But if you interpret your body's response as a sign that you are in a bad place with no way out, the worry and ruminations that result may send you down into a choke.

Chapter 6: the choking cure.

- When the students open their packets they found a piece of paper listing a bunch of different values that people might hold. For instance, some might value their relationships with their friends or family, being good at art, whether athletic ability. Students in the treatment group were asked to indicate the value that was most important to them and to write a brief paragraph explaining why they thought this value was an important one. Students in the placebo group were asked to indicate the value that was least important to them and why this value may be important to someone else. Once students have finished writing, they were instructed to place their packet back in the envelope it had come in, seal it and return it to the teacher. The teacher then resumed his or her lesson plan. The entire procedure took about 15 minutes in total. At the end of the fall term, the researchers were given access to the official transcripts of all the students. Black students overall still performed worse than their white counterparts, but the black students in the treatment group (the students who wrote about their most important values) performed better than the black students in the placebo group by about a fourth of a great point. This improvement was not limited to a few students—the exercise packet benefited about 70% of the black students in the treatment group. Among the white students, meanwhile there was no difference in performance between the treatment and the placebo groups. Given that the average difference in academic performance between black and white students was about 70% of one great point, and the blacks in the treatment group improved by roughly 25% of the great point, the results of the study represents almost a 40% reduction in the racial achievement gap.
- Cohen thinks that one way to reserve this way of negative intelligence stereotypes is to allow black students to reaffirm their integrity. Having African-American students are about qualities that are important to them may enhance their sense of self-worth and value, which may in turn buffer them against negative expectations and their consequences. Although this writing assignment only happens once, it can have a big affect—students do better academically after they write which reduces the power of the stereotype. A negative cycles changed into positive, reinforcing cycle.
- You can start by simply setting aside a few minutes for students to reflect on their positive qualities.
- Immediately after telling them what was on the line, we asked some students to write for 10 minutes about their thoughts and feelings concerning the test they are about to take. We wanted the students to get their feelings about the pressure off their chests so we told them that they couldn't be linked to their writing by name so they should feel free to write openly and freely about any worries. Other students were not given the opportunity to write, but just sat patiently for about 10 minutes while the experimenter got all the testing materials together. What we found is quite amazing. The students who wrote for 10 minutes about their worries before the math test perform roughly 15% better than the students who sat and did nothing.
- Writing about your worries before a test or presentation prevents choking.

- After several weeks of writing about a life stressor, people have fewer illness related symptoms and even show a reduction in doctor's visits.
- When University freshmen, for example are asked to write about the stress of leaving home for the first time and going off to college, they report a decrease in their worries and intrusive thoughts. Writing about their worries also leads to improved working memory over the course of the school year. Expressive writing reduces negative thinking, which frees up cognitive horsepower to tackle what comes your way.
- You don't even have to practice meditation for several years to reap the thought control benefits that it brings. A recent study by Davidson and his colleagues showed that only three months of intensive meditation—a practice in which you observe whatever thoughts and perceptions arise in your consciousness without making negative judgments about it— reduce people's tendency to have their attention captured by unwanted thoughts or events.
- Recently, my laboratory, we have shown that people with no meditation experience at all can benefit from about 15 minutes of meditation training before they take a pressure filled math test. College students who were given a short tutorial in mindfulness before they take a high-stakes test scored on average a B+ on the test while those students that didn't get the mindfulness training beforehand scored a B-. This difference, although small is remarkable given that both groups performed similarly on the practice test before the stress ensued.
- Getting people to think about aspects of themselves that are conducive to success can be enough to propel them to the top performance and prevent choking.
- Simply moving the standard background questions about sexual identity from the beginning to the end of the test lead to significantly higher performance by women on the AP calculus test.
- In sum, almost 500 Americans completed the exams. The test takers were not trying to gain admittance to a graduate program in psychology and actually knew very little about why they are taking the tests. The test takers, out of the goodness of their own hearts, had volunteered for the study because the researchers had asked for their help. On an initial test that was given prior to the Democratic national convention, and so when Barack Obama had not yet accepted his party's nomination for president, white test takers scored better on the average than their black counterparts despite the fact that their education levels of the whites and blacks in the study were equivalent. This finding represents the radical achievement gap that can be found starting in elementary school and that continues all the way through university level in the United States. However, on the test administered immediately after Obama's on the main nation acceptance speech, and on a test given just after Obama's presidential election victory, things changed. Black test takers performance improved to such an extent that their scores no longer differed substantially from whites.

Think differently. Think about yourself in ways that highlight your propensity for success. Instead of thinking, for example, that you belong to a sex or racial group that is unfairly stereotyped to be bad at math, remind yourself instead that you have the tools to excel—maybe you are a college student at a prestigious university or you have done well in school in the past. Focus on your credentials to help turn a bad performance into a good one.

Reinterpret your reactions. If you get sweaty palms and your heart races under pressure, remember that these physiological reactions also occur under more pleasant circumstances, such as when you have met the love of your life. When under pressure, if you can learn to interpret your bodily reactions in a positive way (“I am amped up for the test”) rather than negative (“I am freaking out”), you may be able to turn your body to your advantage.

Pause your choke. Walking away for a few minutes from a challenging problem that demands working-memory can help you find the most appropriate solution. This “incubation” period helps you to let go of your focus on irrelevant problem details and instead think in a new way or from an alternative perspective—and can produce an “aha” moment that can ultimately lead to a breakthrough and success.

Educate the worries. Merely drawing attention to the stereotypes students may hold—for instance, “Girls can’t do math” or “Whites are not as good at math as Asians”—and reminding them that they are stereotypes and nothing more can help to prevent people from worrying about their ability when the pressure is on. It might seem counterintuitive that teaching people about a stereotype regarding their ability would quell its effects rather than exacerbate them, but giving people an excuse for their worries allows them to see their performance as less diagnostic of their intellect.

The Obama effect. Seeing examples of people who defy common stereotypes about sex, race, and ability can help to boost the performance of people in these social groups. After all, if a black man can become leader of the free world, certainly the stereotype that African-Americans are not intelligent just can’t be true.

Practice under pressure. The old adage that practice makes perfect can do with a bit of adjustment. Studying under the same conditions

Tips to Ensure Success Under Stress

Reaffirm your self-worth. Before a big test or presentation spend a couple of minutes writing about your many interests and activities. This writing can promote feelings of self-worth. Reaffirming yourself, especially when you question your abilities, can boost your confidence and performance.

Map out your complexities. Before taking an important test, spend five minutes drawing a diagram of everything that makes you a multifaceted individual. This exercise can help to highlight that this one test score doesn't define you, which can in turn take some of the pressure off.

Write about your worries. Writing for ten minutes about your worries regarding a presentation or test you are about to take can thwart the anxieties and self-doubt that often emerge in high-pressure situations.

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you will be tested under—for instance, in a timed situation with no study aids—helps you get used to what you will experience on test day. There is also research suggesting that testing yourself on material (rather than simply studying it) helps you remember it better in the long term. After all, you are going to be tested during the test so you might as well practice being tested.

Outsource your cognitive load. Write down the intermediate steps of a problem rather than trying to hold everything in your head. This provides you with an external memory source, one that may be relatively free of worries compared to your own prefrontal cortex. As a result, you may be less likely to mix up information or forget important details of what you are doing.

Organize what you know. Take a clue from expert writers like JC, whom we talked about in chapter 2. Coming up with meaningful ways to organize the information you need to remember for a big test or presentation can help take the burden off your working-memory and actually help you remember more.

Chapter 7: choking under pressure. From the green to the stage.

- When athletes think about themselves screwing up, they are more likely to do so.
- The answer lies in what worrying catalyzes. When people are concerned about themselves and their performance, they tend to try to control their movements in order to ensure an optimal outcome. What results is that fluid performances—performances that run best larger outside of conscious awareness—are messed up.
- Successful athletes don't reason step-by-step through their actions using their powerful prefrontal cortex as a guide. Rather, they are able to circumvent this step and, from what they see around them, start to play out what will happen in their head before it is actually realized. As a result, when elite athletes worry, it's not such a problem that working memory is compromised, because

these individuals don't rely heavily on cognitive horsepower to Excel. Worrying often leads to problems, however. When you are at the top of your game and you suddenly find yourself worrying about screwing up, the desire to shine can prompt you to exert conscious control over what you are doing. This added control can backfire, disrupting well-earned sports and even musical performances that operate best outside the prefrontal cortex.

- The moral of the story: although we may think the support of others will always manifest itself as a home-court advantage, the opposite may actually be true—at least when the pressure is on.
- Why can being in front of a supportive audience cause people to choke? It comes back to the dangers of thinking too much. When we want to impress our friends, coaches, teammates, colleagues or fans, we worry about doing so. To deal with these worries, we often attempt to take matters into our own hands. Our goal is to ensure success so we start trying to control specific aspects of what we are doing.
- If you happen to be performing a complex thinking or reasoning problem that trains working memory, then worries alone can lead you to choke. If you're performing a highly practiced motor skill, then worries in themselves do not lead to choking. But your attempts to consciously control your performance culture a few up.

Chapter 8: fixing the cracks in sports and other fields. Anti-choking techniques.

- While there is certainly merits the age old adage “practice makes perfect,” practice has a better chance of producing perfection when players practice under the conditions they are actually going to face in the competition.
- Our goal is to “reduce the gap between training and competition”.
- When golfers practice putting while being videotaped and are told that the videotape will be watched later by golf coaches, they perform better under subsequent pressure filled situations than those who did not receive this high pressure training.
- When musicians were asked to give a performance in front of an audience—some of whom were said to be rating their play—those who had practiced under the watchful gaze of a video camera beforehand performed much better than those who practiced in isolation.
- You might assume a good option would be just to tell the goalie not to overanalyze his saved, but research shows that telling people not to think about something isn't effective at suppressing unwanted thoughts or disrupting an inappropriate focus of attention. In fact, when people are told not to think of something— the famous case is a white bear—they tend to do it more. Fortunately, a number of active focusing exercises and strategies have been proven beneficial for limiting player's tendencies overthink their next move.
- Skilled golfers make more putts in do or die situations when we distract them from what they are doing than when we leave them alone. In one study, we had golfers listen to a series of words being played from a loudspeaker while they were putting. Every time the golfers heard the word, they had to repeat it out loud. The process of drawing golfer's attention away from their own performance improved their putting under pressure.
- A recent study of basketball players echoes our findings. Australian researchers found that players with a propensity to choke made more free throws under pressure when they listen to music than when they did not. Distracting these athletes from focusing in too much detail on the shot allowed them to execute their free throws with minimal involvement from working memory

and the prefrontal cortex. Because of this involvement often slows down fluid movements and creates new opportunities for error, the player sank more shots when they were distracted.

- Focusing on what to do (a strategy focus) rather than how to do it—a technique focus— can help prevent cracking under stress.
- Some psychologists have suggested that focusing on a keyword related to the outcome of the intended play or action is the best medicine for poor performance under stress. Top golfers were asked to putt while thinking about a word that encapsulated the entire putting motion (such as smooth) instead of words that represented the physical aspects of their technique (such as head, knees and arms). When just putting in a practice situation where there was no pressure to succeed, the golfers with holistic swing thoughts perform the best. More importantly, when the pressure was ratcheted up by offering to have to be the best putters, the performance of the golfers who focused on the holistic keyword was not hurt while the golfers who focus on technique choked under pressure.
- The golfers then spent several minutes describing the parts they had just taken, or they worked on an unrelated task instead. Afterward, all the golfers were asked to perform the putts again. After spending time describing their past putts, skilled golfers needed twice as many attempts to sink their putts as the skilled golfers would not put their performance into words.
- Davis has a new policy of immediately picking up on any negativity. Davis has swim is immediately review a bad performance poolside and think about how they would fix it. As a result, Canadian swimmers are turning around the performances right away.
- Tips to combat performance flops under pressure in sports and performance.
 - **Distract yourself.** Singing a song or even thinking about your pinky toe can help prevent the prefrontal cortex from regulating to closely movements that should run outside awareness.
 - **Don't slow down.** Don't give yourself too much time to think and to control your highly practiced putt, free-throw, and penalty kick. Just do it.
 - **Practice under stress.** Practicing under the exact conditions you will face in the do or die situation is exactly what is needed to perform your best when the stresses on. Get used to the pressure so competition is not something you fear. Also, by understanding one pressure happens, you can create situations that will maximize the stress in your opponents.
 - **Don't dwell.** Take that past performance and change how you think about it. See your failures as a chance to learn how to perform better in the future.
 - **Focus on the outcome, not the mechanics.** Focusing on the goal, where the ball will land in the net, helps cure your practiced motor programs to run flawlessly.
 - **Find a keyword.** A one-word mantra—such as smooth during a golf stroke— can keep you focused on the end result rather than the step-by-step process of performance.
 - **Focus on the positive.** Don't be helpless. If you focus on the negative this can make you feel out of control and increase the likelihood that you will not work as hard to obtain future performance goals.
 - **Cure the yip's by changing up your grip.** An alteration in your performance technique reprograms the circuits you need to execute your shot. Hopefully clearing up your brain and body of the motor pickup.

Chapter 9: choking in the business world.

- Our ability to make sense of movie plots, to navigate novel situations, or even to form first impressions of the people we meet is greatly aided by what we psychologists call schemas. Packets of knowledge that provide expectations about the activities we do, schemas help us comprehend new situations with familiar details. For instance, we all have a schema for what happens in the restaurant. We expect that when we go in to say, a new pizza place, we will be seated, a waiter will take our order, someone will bring us up high, and we will be expected to pay for this service before we leave. If we didn't have this restaurant schema upon entering a dining establishment we might proceed directly to the kitchen and start cooking ourselves. Schemas help us make sense of new situations we encounter a stun what we have learned about similar activities in the past.
- When people were told nothing about the passage ahead of time, they were confused about what they were reading and their memories for the details of the passage were very poor. However, when people were told ahead of time that the passage was about washing clothes, their memories for the passage substantially improved. Interestingly, if people were told that the passage was about washing clothes after they read the passage, but before they were asked to recall the details, their memories were no better than those of individuals who had never been told what the passage was about in the first place. The take-home point is that having the appropriate schema or context for encoding information helps us understand and recall this information, but only if we get the schema at the outset.
- Schemas are relevant to interview situations because giving your interviewer a positive schema for interpreting your employment potential early on in the meeting can help shape how he or she remembers the entire encounter. If you start out with a few well rehearsed sentences about why you are the right person for the job, this first impression can set up the whole tone of your interview and for what is taken away from the meeting.
- When your interviewer has crossed arms and you cross your arms, he or she is better able to make sense of what you are doing because he or she is able to meter your actions on his or her own motor repertoire.
- The NYU students smiled, on average, a little over once a minute when they were with a smiling confederate and averaged only a third of a smile per minute when they were with a confederate who did not smile. We judge people and objects to be more pleasant when we are smiling in comparison to when we are frowning, so if you want your interviewer to think positively about you, try smiling. The saying is true: "when you are smiling, the whole world smiles back at you."
- An interview situations, regardless of how nervous you are, your behavior counts. Keeping positive and being a chameleon with your interviewer can help. Indeed, other research has shown that when interviewees mimicked the gestures and mannerisms of interviewers, the interviewer believes the interviewee is better informed and has sounder ideas than when he or she does not mimic. Of course, don't take this too far. Once people are aware that they are being copied, the liking can turn into annoyance.
- Try not to think about something may result in the propensity to have the exact thought you are trying to avoid.
- Then there is also an unconscious search for the unwanted thought, whose purpose is to check for errors in our ability to strike the unwanted thought from my mind.

- On the pitch, director self to focus on the empty net rather than on the goalkeeper, and in the boardroom, focus on your three strong talking points rather than what you don't want to say.
- For over 15 years, researchers around the world have been inviting people into their laboratories for the sadistic purpose of stressing them out by asking them to prepare a speech that they will have to give in front of others. The test is called the Trier Social Stress Test, named after the university, Trier University in Germany, where it was developed.
- Upon arrival at a research lab, participants are led into a room occupied by a three member panel. People are asked to take a seat opposite the panel and told that they have the task of creating a five-minute presentation that will convince the panel that they are the best applicant for a job opening in the laboratory. People are told that they will be evaluated on both the content of the speech they create and their presentation style—this means no fidgeting, or crutch words etc. the person usually has about 10 minutes to prepare the speech. Then, with a video camera focused on them and their very move, the study participant is asked to actually stand up and give the speech to the often times less than supportive panel situated in front of them. As if that were not enough, immediately after the speech the person is asked to do another task where he counts backwards from 1022 x 13--out loud—as quickly and accurately as possible.
- Just the act of giving the speech or doing math does not induce as much stress without the included elements of social evaluation.
- Becoming accustomed to the pressure of performing in front of others makes public speaking a lot less daunting.
- It's well known that when Pres. Obama has to give a big speech, he practices extensively ahead of time.
- It is not necessary to practice with the specific speech or pitch you have to give, but practice in general can help. For instance, if you spend time each week making a fool out of yourself—perhaps by taking an acting class or doing improvisation but just giving toasts with your friends—this experience might help you alleviate your fear of speaking out loud.
- Whether you are pitching ideas to other VPs or leading a meeting with your potential clients, chronic stressors outside your work life can creep in. Just as putting pen to paper helps to curtail the power of words before a big test, getting chronic stressors out on paper can be beneficial as well. Merely Reading about the stressful events in your life on a regular basis—say, 20 minutes once a week or so can bolster your cognitive horsepower by decreasing the occurrence of intrusive thoughts and worries.
- When the stresses on, working memory and the prefrontal cortex can be compromised and our inhibition is one of the first things to go.
- Researchers have shown that when parents working memory is at its lowest, their tendency to react negatively to their children is highest. Rather than reason with a disobedient and challenging child and they non-emotional way, parents with low working memory tend to meet anger with anger, which doesn't usually lead to a positive outcome for either the parent or the child.
- As he talked about earlier in this book, taking a step back and help people see a problem from a new perspective and also prevent emotions from taking over. Moreover, merely educating people that their prefrontal cortex will be compromised under stress and they may be more reactive in nature can actually make them less likely to react poorly.

- When the worry starts, if we are doing something that demands a heavy dose of cognitive horsepower our performance will suffer. But worries alone are not usually the problem when we are faced with a simple task or action that doesn't require a lot of thought.
- Getting students to talk aloud while solving math problems, for example, gets them focused on the task at hand and limits the possibility of worries and other distractions keeping in.
- Be a memory aid. In the interview, give a schema at the outset that will help the interviewer in code your positive attributes. Start off by telling your interviewer why you are the best person for the job.
- Think about what you want to say, not what you don't want to say, because when you try not to think of something, it becomes more likely to occur.