***How to Change***

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**Introduction**

 Why is it that the tools and techniques designed to spur change so often fail? One answer is that change is hard. But a more useful answer is that you haven't found the right strategy. We often fail by applying the wrong tactics in our attempts at change. We search for solutions that will deliver the quick knockout victory and tend to ignore the specific nature of our adversary.

 As a newly minted assistant professor at Wharton, I was confronted with strong evidence that our small, daily failures to exercise or eat healthfully aren't trifling human foibles, but rather are serious matters of life and death. During an otherwise dull academic presentation, I encountered a pie chart that's been burned into my mind's eye ever since. The chart broke down why most Americans die earlier than they should. It turns out that the leading cause of premature death isn't poor health care, difficult social circumstances, bad genes, or environmental toxins. Instead, an estimated 40 percent of premature deaths are the result of personal behaviors we can change. I'm talking about daily, seemingly small decisions about eating, drinking, exercise, smoking, and vehicle safety. These decisions add up, producing hundreds of thousands of fatal cancers, heart attacks, and accidents each year.

 I was floored. I sat up a little straighter and thought, “Maybe I can do something about that forty percent.”

 And it was more than matters of life and death that grabbed my attention. While I've never seen a pie chart dissecting how our daily decisions affect our prosperity and our happiness, it stands to reason that our missteps accumulate in those areas of life, too.

 When it comes to changing your behavior, your opponent isn't facing you across the net in a tennis match. Your opponent is inside your head. Maybe it's forgetfulness, or a lack of confidence, or laziness, or the tendency to succumb to temptation. Whatever the challenge, the best tacticians size up their opponents and play accordingly.

 The chapters ahead show you how to identify your adversary, understand how that adversary tries to thwart your progress, and apply scientifically proven techniques that are tailor-made to vanquish it. Each chapter focuses on an internal obstacle that stands between you and success. By the time you're finished reading, you'll know how to recognize these obstacles and what can help you overcome them.

**Chapter 1- Getting Started**

 Every January 1, about 40 percent of Americans resolved to make life improvements: to get fit, save more for retirement, quit drinking, or learn a foreign language. One third of Americans’ New Year's resolutions bomb by the end of January, and four fifths fail overall. As a result, nearly every interviewer asks me the same cynical but fair question: If so many resolutions fail, why bother? Shouldn't we just cancel this silly tradition?

 I've been frustrated with failed resolutions in the past, too, and I'm committed to teaching more people about the science that can help them succeed. But this question still drives me a little crazy. As actor David Hasselhoff has said, “If you're not in the game, you can't hit a home run.”

 In my opinion, New Year's resolutions are great! So are spring resolutions, birthday resolutions, and Monday resolutions. Any time you make a resolution, you're putting yourself in the game. Too often, a sense that change is difficult and daunting prevents us from taking the leap to try. Maybe you like the idea of making a change, but actually doing it seems hard, and so you feel unmotivated to start. Maybe you failed when you attempted to change before and expect to fail again. Often, change takes multiple attempts to stick.

 I'd like to remind cynics that if you flip the discouraging statistics about New Year's resolutions on their head, you'll see that 20 percent of the goals set each January *succeed*. That's a lot of people who've changed their lives for the better simply because they resolved to try in the first place. For some people, fresh starts can help prompt small changes. But they can also inspire to transformative change by giving you the *will* to try pursuing a daunting goal.

**Chapter 2- Impulsivity**

 Doing the “right” thing is often unsatisfying in the short term. You know you should take the stairs, but you're tired, and the escalator beckons. You know you should focus on important tasks at work but scrolling through social media is more fun. You mean to keep your temper in check but yelling at an irritating colleague is more satisfying. And you know you ought to keep your nose in your books the night before a big test but binge-watching your favorite Shonda Rhimes show is far more enticing. Economists call this tendency to favor instantly gratifying temptations over larger long-term rewards “present bias,” though its common name is “impulsivity,” and it's unfortunately universal.

 Lots of research shows that we tend to be over-confident about how easy it is to be self-disciplined. This is why so many of us optimistically buy expensive gym memberships when paying per-visit fees would be cheaper, register for online classes we’ll never complete, and purchase family sized chips on discount to trim our monthly snack budget, only to consume every last crumb in a single sitting. We think “future me” will be able to make good choices, but too often “present me” succumbs to temptation.

 People have a remarkable ability to ignore their own failures. Even when we flounder again and again, many of us manage to maintain a rosy optimism about our ability to do better next time rather than learning from our past mistakes. We latch on to fresh starts and other reasons to stay upbeat, which may help us get out of bed in the morning but can prevent us from approaching change in the smartest possible way.

 The psychologists Ayelet Fishbach and Kaitlin Wooley suspected that people could tackle tough goals more effectively if they stopped overestimating their willpower. They predicted that if people focused on making long-term goal pursuit more enjoyable in the short-term by adding the proverbial lump of sugar to the medicine, they'd be far more successful.

 In one study, Ayelet and Kaitlin encouraged participants to eat more healthy foods. In another, they encouraged more exercise. The twist was that some study participants (chosen at random) were prompted to select the kinds of healthy foods or exercises they expected to enjoy most while others were simply encouraged to pick the ones they’d *benefit* from most (which is what the majority of us do naturally).

 Ayelet and Kaitlin discovered that encouraging people to find the fun in healthy activities led to substantially better results, leading people to persist longer and their workouts and eat more healthy food.

 Rather than believing we'll be able to “just do it” (as Nike implores us), we can make more progress if we recognize that we struggle to do what's distasteful in the moment and look for ways to make those activities sweeter.

**Chapter 3- Procrastination**

**Handcuffing Ourselves**

 Whether you do something that reduces your own freedoms in the service of a greater goal, you're using a commitment device. Telling your boss you'll finish an optional report by a certain date is a commitment device to get that work done. Stocking your kitchen with smaller plates is a commitment device to help you eat smaller portions. Downloading an app like Moment that lets you set daily limits on your smartphone use is a commitment device aimed at reducing your technology addiction. And at the extreme, putting your name on a gambling self-exclusion list (an option in some states, like Pennsylvania) so you'll be arrested if you set foot in a casino is a commitment device to keep you away from the card tables.

 Of course, restrictions designed to prevent impulsive choices are all around us: speed limits, laws against drug use, laws against texting while driving, and even standard, spaced-out homework deadlines. But normally these kinds of restrictions are imposed on us by a presumably benevolent third party, such as a government or a teacher. What makes commitment devices weird is that they’re self-imposed- we're handcuffing *ourselves*!

 Commitment devices can be something of a god-send. They help us change our behavior for the better by locking us into choices we make when we're clearheaded about what's good for us, not when we're hotheadedly reacting to an imminent temptation, and they keep us from indulging in the temptation to misbehave later on.

 That's all well and good, a skeptic might note- but what if, say, your bank doesn't offer a locked savings account (almost no banks do)? How are you supposed to find a commitment device for every long-term goal you want to pursue? If you are an entrepreneur who wants to hit her deadlines, there's no teacher around to impose penalties for lateness. If you want to exercise more, I'm not likely to be at your gym handing out iPods loaded with audiobooks you can listen to on-site. For most goals you want to pursue, you'd be justified in wishing for a simple way to create your own commitment device.

 Fortunately, there *is* a simple way.

**Cash Commitment Devices**

 Picture a big, juicy cheeseburger. It's loaded with your favorite toppings- letters, tomato, onion, bacon, whatever you crave most- and it smells incredible. If you were out to lunch with a friend and a waiter served that burger at the table next to yours, wouldn't you want one?

 But what if you had just promised yourself you'd start eating healthier. Could you resist?

 This is the question posed by my Wharton MBA's every year by guest speaker Jordan Goldberg. Jordan is a co-founder of stickK, the company whose data Hengchen, Jason, and I analyzed to determine whether people are more likely to set goals after fresh start dates.

 After Jordan prompts my students to contemplate his burger scenario, the room invariably fills with murmurs. My students would all *like* to believe they'd have the willpower to resist, but most know themselves well enough to admit they *might* order the burger.

 Next, Jordan asks an easier question: Now what if you knew you'd owe someone 500 dollars if you ate the cheeseburger? You’d think a lot harder about giving in to the tasty temptation, right?

 Everyone nods, myself included. There's nothing controversial about that decision.

 With these questions, Jordan has introduced my students to an unusual type of commitment device- one that helps you stick to your plans by literally making you pay if you don't. I call these “cash commitment devices,” and there are several companies that offer them to consumers. To date, hundreds of thousands of people have given cash commitment devices a try, and they turn out to be quite handy. All you have to do is set a goal, choose someone (or some piece of technology) to accurately track your progress, and put money on the line that you'll have to forfeit to a third party if you don't succeed. (You can specify if you'd like the money to go to a certain individual or charity, and to ensure failing will really sting, you can even pick a charity you hate- an “anti-charity”- Such as a gun rights or gun control group, depending on your politics.) You can wager as little as a few bucks, but bigger stakes, unsurprisingly, correlate with higher rates of success.

 Of course, a real problem is that cash commitment devices sound pretty bizarre to some people. After all, you're literally signing up to pay fines! But the thing is, they've proven highly effective even if they are counterintuitive.

 The biggest challenge with cash commitment devices isn't their effectiveness; it's getting more people comfortable with the idea of using them. And it's reasonable to have some hesitation. As great as these results sound, maybe you're just not ready to impose costly restrictions or fines on yourself in case you don't hit all of your goals. If so, you're not alone.

**Pledges and Other Soft Commitments**

 Imagine you're a busy doctor meeting with a patient who's complaining of a sore throat, stuffy nose, and cough. It's clear that all your patient wants is a prescription to put her out of her misery. Naturally, you're eager to help.

 But let's say your patient is begging for antibiotics, and you know her symptoms strongly suggest a bad cold, not a bacterial infection like strep throat or pneumonia. It's *possible* it's an infection, and that antibiotics could help, but it's unlikely. On top of being almost certainly unhelpful in this case, antibiotics are expensive and sometimes lead to bad reactions such as rashes, diarrhea, and vomiting. Plus, the more they're prescribed, the faster antibiotic-resistant bacteria evolve, making future infections more difficult to treat.

 So now you face a troubling decision over what to do. Could you resist the temptation to write your patient the script she requested? Or would you break with medical guidelines and give her what she wants, hoping that will make her feel better, though the evidence suggests otherwise?

 Although we like to think of doctors as infallible, research shows that many regularly give in to the temptation to offer patients what they want. In fact, American adults receive an estimated forty-one million unnecessary antibiotic prescriptions annually at a cost of more than a billion dollars (and that's just the price for the drugs).

 Aware of these troubling statistics, a creative team of doctors and behavioral scientists who knew about the power of commitment had an idea they thought could help.

 The researchers hoping to stem unnecessary antibiotic prescriptions realized this and came up with an additional step that they hoped would make doctors even more likely than usual to think twice before caving in to patients demands. They asked doctors to sign a formal pledge not to prescribe antibiotics unless they were necessary and then to display that pledge publicly in their waiting rooms.

 The psychology the researchers were counting on to buoy this tactic worked like this: as soon as you sign a commitment and post it on your wall, you've created a mental cost for writing an unnecessary prescription. If you're tempted to write that script, you’ll now be hyperaware that doing so means breaking your word. After all, you signed your name to a framed letter promising not to do this very thing. In short, the “price” of prescribing an unnecessary antibiotic has gone up.

 The team that developed this idea convinced the managers of five busy primary care clinics in Los Angeles to let them test it. Some of the doctors in these clinics were asked to sign and post a pledge in their waiting rooms stating that they were “dedicated to avoid prescribing antibiotics when they are likely to do more harm than good.” Other doctors (in a “control” group) got no such request.

 Over the course of the study nearly one thousand patients complaining of acute cold symptoms visited these doctors offices. And the researchers found that asking doctor to sign and post the pledge cut and inappropriate antibiotic prescriptions by about a third compared with the control group.

 The clinician pledge is a prime example of what I call a “soft commitment”- a commitment that comes with only a *psychological* price tag for failure.

**Chapter 4- Forgetfulness**

 Forgetfulness isn't always a made-up excuse. It's a more serious and common culprit for follow-through failures than you might think. According to one recent study, the average adult forgets three things each day, ranging from pin numbers to chores to wedding anniversaries. We're so forgetful, in part, because it's difficult for information to stick in our brains, especially if we've only thought about it once or twice.

 Naturally, forgetting is more common the more we attempt to juggle, and the number of tasks and stimuli the average person has to keep track of these days is staggering.

 One obvious way to prevent this kind of mistake is to create reminder systems. And research has shown that reminders can help (so companies such as Evive are arguably doing a lot of good). Reminding people- by mail, telephone, or in person- produces flake out by an average of 8 percentage points. Similarly, in low-turnout elections, reminders sent by mail a little more than a week ahead of time can increase turn out among registered voters by as much as 6 percent. Reminders can also help people follow through when it comes to saving money.

**Cue-based Planning**

 Often when we make plans, we don't focus on what will trigger us to act. Instead, we focus on what we intend to do. For instance, a typical plan to improve oral hygiene might be: “I'm going to start flossing more.” Renowned New York University psychology professor Peter Gollwitzer’s work shows it's vital to link that intention with a cue, such as a specific time, place, or action. If you want to floss more regularly, a helpful tweak to your plan would be to say, “*Every night after brushing my teeth, I'm going to floss*.”

 Forming an implementation intention is as simple as filling in the blanks in the sentence “When \_\_\_\_\_\_\_ happens, I’ll do \_\_\_\_\_\_\_.” So “I plan to increase my monthly retirement savings” has a missing ingredient that lowers your chance of success, but “Whenever I get a raise, I'll increase my monthly retirement savings” in a more complete plan. Similarly, “I’m going to spend more time on my online masters” is too vague, while “On Tuesdays and Thursdays at 5:00 p.m., I’ll spend an hour working on my online master’s” is better. And “I’ll walk to work more” isn’t quite right, but “Anytime it’s between thirty-five and eighty degrees Fahrenheit and isn't raining or snowing, I’ll walk to work” does the trick.

 Research has shown that you can overdo it on cue-based planning. Having too many plans can overwhelm us. If we form multiple cue-based plans for competing goals (to exercise more and to learn a foreign language and to get a promotion and to renovate the kitchen), we're forced to face the fact that doing everything required to succeed will be really tough. And this leads our commitment to dwindle, making it harder to achieve even one of our goals.

**Chapter 5- Laziness**

**The Path of Least Resistance**

 Laziness is widely viewed as a vice we should work hard to overcome. Countless stories from cultures all over the world- from “The Little Red Hen” to Aesop’s fable “The Ant and the Grasshopper”- teach us that indolence ends in ruin and industriousness in prosperity.

 There's a lot of truth in that lesson, of course. The human tendency to take the path of least resistance- to be passive and go with the flow- has downsides. It's a major reason behavior change can be so hard. When you resolve the spend your evenings earning an online degree instead of binge-watching Netflix, or to start cooking fresh meals instead of ordering takeout, your laziness and comfort with familiar patterns of behavior can work against you.

**How Habits Work**

 Habits are the behaviors and routines we've repeated, consciously or subconsciously, so many times that they've become automatic. They are essentially our brains default setting: the responses we enact with conscious processing. Neuroscience research shows that as habits develop, we rely less and less on the parts of our brain that are used for reasoning (the prefrontal cortex) and more and more on the parts that are responsible for action and motor control (the basal ganglia and cerebellum).

 Because firefighters and other first responders need to be able to do the right thing without much deliberate thinking, they spend enormous amounts of time practicing and drilling for emergencies, building muscle memory and developing routines that turn smart judgments into gut reactions. At the fire academy and on the job, they drill and drill to cut down the time and thought it takes to put on their heavy gear and load their trucks when the fire alarm goes off. They practice search-and-rescue skills, learn how to pull a hose line, and rehearse what to do if an oxygen mask fails.

 When behavioral scientists talk about habits, we often liken them to shortcuts. If you're a coffee drinker, think back to the first time you used a new coffee maker. It presumably required your full attention and took a bit of time as you figured out exactly where to pour the water and how many scoops of grinds you needed. But once you had done it morning after morning, it became habitual, and you could brew your morning joe quickly and without thinking.

 Monotonous as it may sound, research in humans and other animals has proved that habits come from repeated drilling. Habit building is often less intentional than firefighters training to suit up or to pause and scan for signs of life, but it always involves many repetitions of an action, until it becomes not just familiar but instinctive. More often than not, the repetition that builds habits (such as nail biting, smart phone checking, or coffee making) is accidental or mindless. If you want to develop good habits, or to replace bad habits with better ones, you'll be well-served to deliberately and repeatedly drill them, like a firefighter training to do the right thing in a high-pressure environment.

 A simple and largely accurate model of habit formation has been popularized in bestsellers such as Charles Duhigg’s *The Power of Habit* and James Clear’s *Atomic Habits*. When a given behavior is repeated (or drilled) over and over in a consistent environment, and when positive feedback of any kind accompanies its execution, it tends to become instinctual. To revisit the example of making coffee in the morning, the consistent environment is your kitchen at breakfast time; the reward is fresh coffee; and the habit is the set of motions necessary to brew yourself a cup of joe. Or, to use an example made famous by Duhigg, the toothpaste industry cleverly habituated toothbrushing by associating this activity with a rewarding, minty freshness that people came to crave each morning when standing in front of their bathroom sinks.

 The beauty of good habits is that, like defaults that you can “set and forget,” they take advantage of our inherent laziness. Once honed, habits put good behaviors on autopilot so we engage in them without ever thinking about it. In fact, in a fascinating series of six studies conducted with children in adults, psychologists Brian Galla and Angela Duckworth Proved that positive habits are key to what we often mislabel “self-control.” Those around us who seem to have tremendous willpower- people who run three miles every morning, are focused at work, hit the books hardest at school, and generally seem to make the right choices- are not actually endowed with the preternatural ability to resist temptation. Instead, good habits keep them from facing temptation head-on in the first place. They don't even *think* about making the wrong decision. They hit the gym each day because it's a habit, not because they carefully evaluated the pros and cons. They grab a smoothie for breakfast because it's their routine, not because they contemplated a greasy sausage biscuit but chose to exercise willpower. And they floss each night before bed because autopilot tells them to, not because they actively decide to invest time flossing today to avoid gum disease tomorrow.

 In an ideal world, you would also put decisions on autopilot. Once a good habit is successfully ingrained in your life, wise decisions become mindless. Then your tendency to take the path of least resistance helps you achieve your goals instead of standing in your way. He may not have thought about drilling behaviors like flossing and healthy eating the way you’d drill your skills as a pianist or firefighter, but it turns out that's just what you should do.

 Unfortunately, adopting new habits isn't quite as simple as it sounds. Rewarding yourself for desirable behaviors and hitting repeat until your willpower is no longer needed to actively make the right decision is a strategy that sometimes works well. But I learned the hard way that this system operates seamlessly only in a world that's very predictable, which, unfortunately, is not the world most of us live in.

**Elastic Habits**

 I knew that Google was eager to help its employees form better habits around wellness and, in particular, to encourage more employees to use its on-site gyms. So I pitched a low-cost strategy that I and my longtime collaborator, Harvard Business School professor John Beshears, were convinced could help.

 Imagine two people- let's call them Rachel and Fernando- who both want to exercise more regularly. Now say they both sign up for a month of three-weekly sessions with personal trainers because they hope to establish lasting workout habits. Since Rachel and Fernando have taken the same step toward their goal, it may seem that they have the same chance of success.

 But let's say that Rachel's trainer has a different philosophy from Fernando’s trainer. Rachel’s trainer believes having a strict routine is the best way to turn exercise into a habit. She asks Rachel to pick her favorite workout time and tells her that they'll meet three days every week at that time. By the end of the month, the trainer tells “Routine Rachel,” she’ll have built a lasting habit.

 Fernando, like Rachel, figures out his ideal daily workout time and makes exercise plans with his personal trainer. But his trainer believes flexibility is important and isn't too concerned about exactly when Fernando exercises, so long as it happens three times each week. She tells “Flexible Fernando” that varying the timing of his visits to the gym will help him learn to roll with the punches and get good at scheduling his workouts around conflicts. Fernando's trainer assures him that by the end of the month, exercising three times a week whenever he can fit the exercise in, he’ll have built a lasting habit.

 When John and I asked dozens of psychology professors at leading U.S. universities which hypothetical trainer they thought had the better philosophy, there was a clear consensus. The vast majority predicted that visiting the gym at the same time on a strict routine would produce more lasting exercise habits. John and I thought so, two.

 So we were startled to discover that we had things all wrong. John and I by no means developed our misguided intuition out of the blue. A large body of evidence suggests that consistent routines are important to producing lasting habits. Research demonstrates that people are far more likely to take their medication consistently when they have regular pill-taking routines, and the vast majority of regular gym goers report exercising at a consistent time of day.

 John and I had good reason to suspect that if we wanted to help people build good habits around social media use, sleep, exercise, medication adherence, homework completion, firefighting, or parenting, getting them to develop consistent, stable, and familiar routines could be valuable. Going back to Rachel and Fernando, we had every reason to believe that Routine Rachel’s trainer, who urged her to visit the gym at the same time each day, would help build a more lasting exercise habit than Flexible Fernando’s trainer, who prioritized flexibility.

 Our friends at Google loved the idea of helping their employees build lasting gym habits and graciously gave us the green light to test our theory at their on-site gyms.

 The study we ran involved more than twenty-five hundred Googlers at offices all around the United States. We measured participants’ attendance at on-site gyms during a monthlong period when we were fiddling with their incentives, and for roughly forty weeks thereafter (to see what lasting effects, if any, our monthlong interventions had produced). The key feature of our study was a test we developed to see whether rewarding regularity in gym habits was the key to *lasting* change.

 Here's how that worked. Some employees were paid for exercising at the same time each day, while others were paid a bit less for exercising at any time. Our study’s design allowed us to compare people who had randomly assigned to behave like Routine Rachels (people who consistently worked out at the same time of day) with people we'd encouraged to act like Flexible Fernandos (exercising the same number of times per week as the Rachels, but on a less consistent schedule).

 When the data came back, we were fairly certain that we would see evidence supporting the power of a strict, regular routine. So we were startled to learn that we had things all wrong.

 But the big surprise was that Googlers were encouraged to hit the gym at a consistent time (the Routine Rachels) essentially built a habit around exercising only at that precise time. We had accidentally turned them into inflexible automatons- transforming Routine Rachels into “Rigid Rachels.” If they couldn't make it to the gym at their regular time, these Rigid Rachels were unlikely to go at all, either during or after our experiment. But both during and after one study, the employees we'd rewarded for exercising on a more flexible schedule kept working out a lot more at *other* times, too, not just at the time they’d said was most convenient. They had very clearly learned how to get to the gym even when their original plans fell through, and overall, that produced a “stickier” exercise habit.

 These results initially shocked me as well as many academic and corporate audiences I presented them to (I took pleasure in polling people at my seminars on their predictions and then revealing that almost everyone was wrong), I think that this is one of the most important discoveries I've made in my research career.

 Yes, forming stable routines is key to habit formation. But if we want to form the “stickiest” possible habits, we also need to learn how to roll with the punches, so we can be flexible when life throws us a curveball. Too much rigidity is the enemy of a good habit.

 Imagine that you're trying to develop a daily meditation routine. Ideally, you'd specify a time and place to meditate, such as in your office after lunch. As discussed in the last chapter, making a plan will help you remember to follow through. And research on habits shows that repeatedly meditating at the same time and in the same place, and rewarding yourself for it, will make it more automatic. But sometimes meditating in your office after lunch just won't work. Maybe you'll have a lunch meeting with a client off-site or a doctor's appointment during your lunch break. My research with John shows that if you can find a way to be flexible and meditate anyhow, under whatever circumstances you find yourself in, and reward yourself for getting it done, your meditation habit will become even stronger. By cultivating flexibility in your routine, your autopilot will become more robust: Your routine will be to meditate even under unideal circumstances. On the whole, you'll build a stickier, more lasting habit.

 I remain convinced that by deliberately building good habits, we can harness our inherent laziness to make positive changes to our behavior. But it's now clear to me that to put good behavior on autopilot, we can't cultivate it in only one, specific way. The most versatile and robust habits are formed when we train ourselves to make the best decision, no matter the circumstances.

**Chapter 6- Confidence**

 Stanford psychologist Al Bandura studied and developed the term “self-efficacy.” Self-efficacy is a person's confidence in their ability to control their own behavior, motivation, and social circumstances. A lack of self-efficacy can prevent us from setting goals.

 You can probably think of examples from your own life- moments when you (or someone you know) didn't achieve your full potential because the task at hand seemed too daunting. Maybe you're a long distance runner who's never attempted a marathon because you don't think you're quite athletic enough to cover 26.2 miles. Maybe you have a coworker who doesn't speak up in meetings because she doesn't think people will value what she has to say.

 Research confirms the obvious: when we don't believe we have the capacity to change, we don't make as much progress changing. One study demonstrated that when trying to lose weight, people who report more confidence in their ability to change their eating and exercise habits are more successful. Another study similarly showed that science and engineering undergraduates with higher self-efficacy earn higher grades and are less likely to drop out of their majors.

 Of course, some aspirations really are out of reach for most people, such as becoming the next Toni Morrison, Marie Curie, or Bill Gates. But many of us stumble in pursuit of far more realistic goals, such as learning a foreign language or getting in shape. Understanding what gives us the confidence to push forward in the face of discouragement, and how we can instill that confidence in other people, can be important for anyone hoping to change and help others do the same.

 Encouraging someone to share their wisdom conveys that they're intelligent, capable of helping others, a good role model, and the kind of person who succeeds. It shows that we believe in them. In theory, being asked to write just a few words of guidance to someone else might give people the confidence to achieve their *own* objectives.

 If asked for dieting suggestions, a vegan will offer plant-based tips. If asked about staying in shape, a busy executive will recommend an efficient exercise regimen. In short, when someone asks for guidance, we tell them to do what *we* would find useful. And after offering that advice to others, we feel hypocritical if we don't try it ourselves. In psychology, there's something called the “saying-is -believing affect.” thanks to cognitive dissonance, after you say something to someone else, you're more likely to believe it yourself.

 It's no accident that well-regarded programs that are designed to help us achieve lasting change, such as Alcoholics Anonymous (AA), encourage members to mentor one another. People in AA get another AA member as a “sponsor” when they sign up, but the sponsor isn't just there to help a mentee stay sober. Becoming a sponsor can help you stay sober *yourself* by boosting your self-confidence. Not only that, thinking deeply about the best way to stay away from alcohol so that you can offer guidance and being accountable to someone else should also strengthen your commitment to sobriety.

 Our expectations shape our outcomes. One of the most influential discoveries psychologists have made in the past fifty years- that how we *think* about something affects how it *is*. we now know that believing a useless sugar pill his medication alleviates many maladies, that attributing the butterflies in your stomach to excitement rather than anxiety will make you a better public speaker, and that believing that people expect you to do well on a test can improve your score.

**Recovering From Failure**

 When pursuing a goal, it can be easy to get discouraged. Research on the aptly named “what-the-hell effect” has demonstrated that even small failures, such as missing a daily diet goal by a few calories, can lead to downward spirals in behavior- such as eating a whole apple pie. This will sound familiar if you've ever give in to temptation in the morning (say, grabbing a proffered donut at a breakfast meeting) and then, having slipped up once, decided “What the hell. I already goofed, so all bets are off.” A minor mistake can tank your confidence, making you believe you'll never succeed. Unfortunately, the more ambitious your goals, the higher the risk of a small but ultimately devastating failure.

 Marissa Sharif, one of my Wharton colleagues, has a clever approach she uses to dodge the what-the-hell effect and maintain her confidence even when her plans veer off track.

 For more than a decade, Marissa has held herself to the ambitious goal of running every day, which helps her stay healthy and deal with stress of a fast-paced career. But she's long been wary of the what-the-hell effect,. recognizing that a missed jog could easily spiral into a series of skipped workouts and eventually she might stop running altogether. In an effort to dodge this kind of unraveling, she came up with a clever idea. Marissa allows herself two emergencies each week because she knows she won't *always* be able to lace up her sneakers in the morning. She might have a late dinner, be on the road for a conference, or simply not have the energy for a run. If she can't squeeze in a workout, she'll let herself take one of her two mulligans, and this flexibility keeps her on track (a bit like our Flexible Fernando).

 While it might seem like she'd be tempted to take a mulligan even when things aren't dire, the opposite is true. Most weeks, Marissa never uses one. She told me that she always sticks to her workout schedule at the beginning of the week in case something more important comes up later, and when it doesn't, which is most of the time, she finds herself running all seven days.

 Another way to prepare for unavoidable disappointments on the path to change is by having a proper understanding of what failure means in the first place. It turns out that the way we interpret failure has a lot to do with future success. Stanford’s Carol Dweck has become legendary for proving this. In dozens of studies with students and adults, she's demonstrated that having a “growth mindset”- the belief that abilities, including intelligence, are not fixed and that effort influences a person's potential- predicts success. Those of us who think we’re born with a fixed capacity for achievement can fall victim to defeatism, putting in little effort to learn from failures and grow. But those of us who view ourselves as works in progress, capable of improvement, exert vastly more effort in the face of setbacks. We seek out challenges, learn from failure, and generally achieve far more as a result.

 We can use clever tricks like Marissa’s to keep us from being so hard on ourselves when we face setbacks, and we can also change the way we interpret failure.

 Carol Dweck's protege, the University of Texas psychologist David Yeager, has worked with collaborators to teach high school and college freshmen that failure is a learning experience- and that through hard work, we can enrich our intelligence in any arena. And one study, thousands of high school freshmen received this encouraging news in the form of a crash course on how to have a growth mind-set. Those who wore getting the worst grades before taking the course saw significant improvement in their GPA later that year. Not only that, but all students who'd been randomly assigned to take the growth mind-set course were more likely to enroll in advanced mathematics classes, regardless of their past academic performance. Students who wouldn't otherwise have had the confidence to try were grappling with complex algebra and geometry, trigonometry and precalculus, opening themselves up to a host of opportunities thanks to their new understanding of the best response to setbacks.

 When we're pursuing a big goal, disappointment is inevitable. And when we get discouraged, it can be tempting to give up. So it's critical to allow for mistakes and prevent them from sullying a strong performance streak. Preparing to recover from the occasional failure and focusing on past successes, we can conquer self-doubt, build resilience, and make it easier to change for years to come- not just until we hit the first bump in the road.

**The Importance of Confidence**

 Behavioral science pops might find it peculiar that I've devoted an entire chapter of this book to building confidence. After all, our tendency as a species towards overconfidence- or believing or more capable, intelligent, and well calibrated than we are- is frequently lamented as one of the most robust and problematic of all human biases. I've even complained about it in this book! Daniel Kahneman, the Nobel laureate who is often called the cofounder of behavioral economics, famously declared overconfidence to be the bias he would most like to eliminate if he could eradicate just one with a stroke of magic.

 However, as problematic as overconfidence can be, researchers suspect that so many of us are overconfident because believing in yourself is *absolutely* critical when you pursue ambitious goals. Evolutionarily speaking, a little excess confidence may, on average, produce better results. When interviewing two job candidates who have identical resumes, both pointing toward average skills, would you be more likely to hire the person who conveys that they expect to be average or the candidate who says they expect to excel? The answer is obvious. We all want the person who exudes confidence. While that may not always be the savviest choice (no one wants to end up with an obnoxiously cocky coworker), I suspect we feel comfortable hiring a person who radiates confidence in part because it suggests they'll keep getting up in the face of failure.

 But where *excess* confidence can help as well as hurt gold strivers, *under*confidence can only stymie their success, so it's critical to address. Because the signals we receive from the people around us shape our beliefs about what's possible, we should take care to surround ourselves with people who will buoy our own beliefs in our potential and support our growth. And when hoping to help others change, we need to provide the same kind of supportive and encouraging mentorship.

 Research has also shown that even the way we compliment people can boost or break their self-confidence. When someone is praised for a “natural” talent, they may develop a fixed mind-set, interpreting failures as a reflection of who they are and accepting defeat. On the other hand, someone who has been praised for their hard work will recognize that effort yields results. So don't say, “That was a brilliant presentation,” the next time your employee nails the sales pitch. Instead, say, “I'm wowed by the way your pitches just keep improving.”

 because these small signals make a big difference, it's crucial to remember that confidence is key when we're pursuing change. No one can make a major breakthrough without experiencing setbacks along the way- the decisive factor in how we respond. By surrounding ourselves with supporters, putting ourselves in the position of advice givers, letting ourselves off the hook for small failures, and recognizing that setbacks help us grow, we can overcome self-doubt. As the saying goes, “Believe you can, and you're halfway there.”

**Chapter 7- Conformity**

 Like most college freshmen, Scott Carrell felt anxious when he arrived at the U.S. Air Force Academy's sprawling Colorado campus in the summer of 1991. He'd been a seller student in high school and hoped he'd shine here, too, but he wasn't sure he had what it takes to excel at one of the most vigorous military academies in the world.

 Still, Scott felt he had a leg up on other first-year cadets (called “doolies”) because he'd have his identical twin to help him through tough moments. He envisioned the two of them pushing each other on the athletic fields, making friends together, and preparing each other for the academy's notoriously difficult classes. But those dreams were quickly dashed. Moments after arriving on campus, Scott and his brother, Rich, were assigned to separate squadrons of thirty students with whom they would live, eat, exercise, and study throughout their freshman year.

 Because it's forbidden for doolies to enter the premises of other squadrons or to leave their own for anything other than classes or athletics, Scott rarely got to see his brother and instead found himself confined to the isolated social bubble to which he’d been assigned.

 When the Carrells were able to talk- usually during prearranged meetings at the library- Scott received a dose of discouragement. Although he'd been the better student in high school, he was startled to learn that his twin was suddenly outperforming him academically. “They wanted him to be a physics major,” Scott said. “I thought, ‘How is this possible? I'm smarter than my brother.’”

 But years later, as an economist studying what drives academic achievement, he found himself thinking back to his twin’s first-year stardom, Wondering about the impact of the people picked to surround him. He'd started reading economics and psychology research about the impact peer groups can have on people's decisions, and he wondered if his Academy peers might hold the answer, particularly given the strength of squadron bonds.

**Why We Soak Up Social Bonds**

 Curious if this might solve the Riddle from his doolie days, Scott was inspired to study how those *randomly assigned* to surround anyone cadet might affect them. Could rubbing elbows with hotshots have lifted his brother's grades? If everyone in your squadron is studying hard and earning good grades, you'll feel like a misfit if you don't hit the books and get some as yourself. You may realize your fellow cadets have figured out that goofing off comes with negative consequences.

 To test his hunch about peer influence, Scott crunched the numbers with a team of collaborators, analyzing three years of academic data on roughly thirty-five hundred dollies who'd been randomly assigned to their academy squadrons. He found that for every 100-point increase in the average verbal SAT score of a doolie’s squadron cohort, that cadets first-year GPA rose by 0.4 grade points on a 4.0 scale. That's the difference between getting all A minuses and being a B or B plus student. The luck of the draw seemed to have a real impact on who got off to a roaring start at the academy and who didn't. Perhaps it could explain his twin’s early success.

 Scott's findings show just how important it is to be in good company with you to achieve big goals and how harmful it can be to have peers who aren't high achievers. A growing body of evidence suggests that people you've spent time with have been shaping your behavior your whole life, often without your knowledge.

**Copy and Paste**

College is an important time for social imprinting for students everywhere. Like many coeds, when she was a junior at Syracuse University, my friend Kassie Brabaw explained this first hand when she signed up to work as a resident adviser to save on expenses.

 As luck would have it, five of Kassie’s fellow Ras-to-be we're vegetarians. She'd along been intrigued by the idea of a meatless lifestyle- it seemed healthy and virtuous. But she never really believed that she could do it. Her family ate meat every meal and rarely bought fresh vegetables. So even though vegetarians sounded great, she had no idea what vegetarians actually ate. Was it just salads, salads and more salad? That was what she imagined and it sounded boring.

 But as the week went by, Kassie watched, amazed, as our vegetarian peers created delicious-looking meals at campus dining halls. Their diets were light on lettuce and heavy on variety- loaded veggie omelets every morning, black bean soup or vegetarian risotto for lunch.

 When training was over, Kassie realized she could easily emulate the strategies that had worked so well for the vegetarians in her RA cohort: eating tasty omelets for breakfast, soups and risottos for lunch, and so on. She decided to try a meatless life for a week. That week then turned into a month, which turned into four years. Although she didn't have a name for it, Kassie had used a strategy I use myself when I went to master a new skill: “copy and paste.” She watched peers who had managed to achieve a goal she wanted to achieve and then deliberately imitated their methods.

 In mentoring students, though, my frequent collaborator, Angela Duckworth and I, have both been surprised by how often a simple suggestion- “Did You think about asking your friend who's acing this class how she studies?”- leads to a blank stare. Of course, we know that *some* copying and pasting occurs naturally. And when Kassie lived in close quarters with vegetarians, she realized she could and should imitate their approach. If she wanted to change her diet. But Angela and I suspected that many people never wake up to the opportunity to deliberately emulate their peers.

 A few years ago, Angela and I began to wonder if more people could reach their goals if they were encouraged to (1) seek out people with a wealth of knowledge they'd likely overlooked, and (2) deliberately copy and paste their life hacks.

 In two studies led by Wharton doctoral student Katie Mehr, we found that encouraging people to copy and paste one another's best life hacks motivated both more exercise and better class preparation in adults who wanted to work out more and college students seeking to improve their grades, respectively.

 Our next study was more ambitious, and more complicated. More than one thousand participants hoping to boost their exercise regimens were randomly assigned to one of three control groups: a control group in which they were simply encouraged to plan how they would increase their activity, an experimental group in which they made plans but were also encouraged to use our “copy and paste” strategy, for a second experimental group in which they made plans and were given a workout hack to copy that was obtained by someone else (like “for every hour that you exercise, allow yourself fifteen minutes on social media”).

 Consistent with our prior findings, we saw that having any new exercise boosting technique to copy worked better than just making a plan, regardless of where the technique came from. But interestingly, it was more helpful if people found strategies to copy and paste t*hemselves* than if the strategies came from someone else. When we dug into the data, we discovered that seeking out exercise hacks to copy and paste lead people to find tips that best fit their own lifestyles. What's more, taking a more active approach to information gathering increased the time participants spent with their role models, increasing their exposure to good habits. Together, these findings confirmed our suspicion about what people stand to gain from *deliberately* copying the successful strategies used by peers. So if you want to get fit, tip books will surely help, but if you can spend some time with fit peers and watch out for ideas, you'll likely do even better.

 When we're unsure of ourselves, a powerful way that people around us can help boost our capacity and confidence is by showing us what's possible. Often, in fact, we’re more influenced by observation than by advice. By watching her vegetarian peers create meals in the dining hall and order in restaurants, Kassie was able to pick up techniques that made vegetarianism work for her. Similarly, Air Force Academy doolies whose Grades improved thanks to studious squadron mates surely felt pressure to measure up to their peers. And when that pressure built, at least some likely noticed study strategies they could mimic. But my recent research suggests that if cadets *deliberately* looked to “copy and paste” successful tips, they could benefit even more.

 Happily, it's easy to turn yourself into a deliberate copy-and-paster. The next time you're falling short of a goal, look to high achieving peers for answers. If you'd like to get more sleep, a well-rested friend with a similar lifestyle may be able to help.

**When Positive Social Norms Backfire**

 When Scott received an urgent call from The Air Force Academy leadership about the plummeting grades of first-year cadets, he thought back to his study showing the influence of squadron assignments on doolie performance. After hanging up the phone, he sat down and wrote a detailed plan.

 Instead of creating squadron assignments randomly, Scott told the academy's leadership that they should deliberately group the worst performers on the verbal SATs with the best. The influence of the stronger students will bring up the grades of their squadron mates, he reasoned, and the project will cost nothing to boot.

 With a promise like that, it's no wonder that the top brass quickly gave Scott and his team the green light to move forward with their plan, authorizing an experimental approach so that Scott would be able to prove the value of his handiwork. Presumably, other universities around the world could then build on this success.

 In 2007 and 2008, under the meticulous direction of Scott's team, academy administrators placed some low-performing students in squadrons with high-performing students and crossed their fingers that the top performers’ study habits would rub off. (Middling students were left in groups with other middling students.) To provide a point of comparison, another set of squadron assignments was made the old-fashioned way- randomly. At the end of the experiment, Scott and his collaborators assessed the academic performance of cadets across the two groups.

 When he first ran the numbers on cadet grades, he was bewildered. There must be some mistake, he thought, as he placed a call to his data source. “Did you accidentally switch the treatment and control groups?” he asked.

 But the error was in Scott's predictions. After a thorough review of the data, the dismal numbers were confirmed. For two years in a row, the new squadron-assignment algorithm had been *harming* doolies’ grades, not helping them- doolies and carefully selected squadrons were doing worse in school than cadets who had been randomly assigned to their peer groups following the usual protocols. *Oh Crap!* thought Scott, as he made frantic calls to ensure that the new squadron-assignment system would be scrapped before the next class of doolies arrived.

 But ending the experiment was only his first responsibility- his second was to understand *why* it had backfired. Scott started surveying students and crunching more numbers to make sense of his results. Pretty quickly, the problem became clear. Instead of intermingling and influencing one another as the researchers expected, the students in squadrons of high and low performers had segregated themselves. With no middle performers to build a social bridge between cadets at the extremes, the squadrons became polarized, and struggling students suffered. Scott had unwittingly demonstrated a serious weakness in what many viewed as a tried and true influence tactic.

 Imagine a social universe in which your colleagues, classmates, and neighbors are constantly outstripping you. Day after day, you discover that you earned less, ran slower, tested worse, and generally paled in comparison to your superstar peers. Sounds kind of awful, right? You might sink into hopelessness and start to steer clear of the overachievers. It’d Be comforting to call the situation that Scott had uncovered extraordinary and just move on, but evidence has taught me otherwise.

 My lesson came when I teamed up with a group of economists to help a large U.S. manufacturing company boost its employees retirement savings. Happily, most of the workers were already saving at a high rate, but there were still thousands of low savers and non-savers to worry about. Many had never actively declined to save, they just hadn't opted into the company's retirement savings program. And these people seemed to us like good targets for a little social pressure. If they thought saving sounded too hard, we figured we could disabuse them of that Idea by letting them know how many of their workers were managing to do it. Maybe our message would also generate some healthy guilt and competition.

 But like Scott's scheme, our plan backfired. In fact, it was a double whammy. First, just letting employees know that most of their colleagues were saving *depressed* sign-up rates for the company's retirement program. Second, sign-ups trended downward. While our results were a bit harder to explain than Scott, our best bet, based on follow-up research, is this: A suitable retirement nest egg is something you accumulate over time. It takes patience- you can't catch up with the Joneses and a matter of weeks. As a result, comparisons with disciplined savers might be exactly the *wrong* message for people who are already worried they're falling behind. Our mailings likely depressed people's hopes further- we made them feel as if they could never catch up! Our results made us think about the “what-the-hell effect” I've described before. If you're going to fail, research shows people often feel they might as well do it at the bang. Consistent with this idea, we saw that the lowest relative earners exhibited the strongest backlash when they learned how many other people were saving for retirement.

 This study and the failure of the Air Force Academy's attempt at social engineering offer an important lesson. For social influence to work, there can't be too stark difference between overachievers and those in need of a boost. If you're hoping to become a faster swimmer, don't start practicing next to Olympic gold medalist Katie Ledecky. even if you thought to copy and paste her routines, you might sense, correctly, that the limits of your natural talent would interfere with the benefits of having insight into her training regimen.

 Similarly, my team’s work on retirement savings suggest that describing others accomplishments is an effective motivator only when their achievements feel like something we can emulate fairly quickly. Some goals require a simple change, but many are more complicated and take a major, extended commitment. if you want to be more active, you can change your daily step count in, well, a day. But you can't hit a 401(k) goal overnight. In endeavors that require a sustained effort, finding out that we’re *way* behind our peers can break our spirit.

 Social influence tactics can add far more value when the focus is on concrete, immediately achievable goals, such as spending fewer hours on social media rather than more long-term or abstract goals, like saving more for retirement.

**Chapter 8- Changing For Good**

 We'd just run a massive experiment with 24 Hour Fitness, a national gym chain, in an attempt to turn more of their members into regular gym goers. Roughly half of Americans don't exercise enough (even Americans with gym memberships), and we were hopeful that we could find a cheap way to encourage more physical activity.

 But our mammoth study hadn’t turned out exactly as planned.

 Tens of thousands of 24 Hour Fitness members had signed up to participate. Most seemed thrilled to join a free four-week digital program meant to boost their exercise. But what we cared about most wasn't who signed up or how happy they were to be there but rather how well our program worked.

 I focused on the good news. Many of the more than fifty ideas we tested had immediately succeeded by building on principles such as the importance of planning, reminders, fun, social norms, and repeated rewards. At almost zero cost, we found lots of creative ways to increase gym attendance while people were in our program.

 Sounds like success, right? That's what I thought.

 The bad news came when we looked at what happened after our program ended. Almost none of the ideas we’d tested had staying power. To be fair, our study showed that through repetition and reward, people converted maybe a quarter to a third of the extra gym visits we helped them make over the course of a month and into lasting habits. But we'd really wanted to discover a few revolutionary, inexpensive techniques for encouraging exercise that could alter people's behavior for years to come. And we hadn't.

 While heartened by our short-term success, I shared Angela's disappointment that we hadn't found more four-week Interventions with lasting benefits. We'd carefully diagnosed the most important internal obstacles people face when trying to exercise regularly, such as finding workouts unpleasant, inertia, and forgetting, and we'd tackled many of them directly. So I couldn't understand what went wrong. Stumped, I called my friend Kevin Volpp, hey star economist and medical doctor who helped build one of the most successful applied behavioral economics research groups in the world.

 I wanted Kevin's perspective. Why did he think we'd been so unsuccessful at making behavior change *stick*?

 Kevin offered up some unforgettable words of wisdom: “When we diagnose someone with diabetes, we don't put them on insulin for a month, take them off of it, and expect them to be cured.” in medicine, doctors recognize that chronic diseases require a lifetime of treatment. Why do we assume that behavior change is any different?

 Study after study (mine included) has shown that achieving transformative behavior change is more like treating a chronic disease than curing a rash. You can't just slap a little ointment on it and expect it to clear up forever. The internal obstacles that stand in the way of change, which I've described in this book- obstacles such as temptation, forgetfulness, overconfidence, and laziness- are like the symptoms of a chronic disease. They won't just go away once you've started “treating” them. They’re human nature and require constant vigilance.

 There's a glass-half-full and a glass-half-empty way to look at what happens when efforts to promote change wind down. I prefer the glass-half-full perspective that lasting change is possible. The key is to treat change as a chronic problem, not a temporary one, just as Kevin suggested.

 When you use the tools in this book to overcome whatever internal obstacles you face on your journey to create change, recognize that you'll want to use them not once or twice or for a month or for a year or two, but permanently. Or, at least, until you no longer want to achieve whatever it is you set out to achieve in the first place.

 When the barriers to change are internal, the key to success is to tackle them with a tailored suite of solutions and to treat change as a chronic challenge rather than a temporary one.

 I've found maintaining change in the face of internal obstacles is far easier than initiating it. For many years, I've successfully engineered change in my own life using the strategies in this book- temptation bundling to make exercise fun so I stay fit, surrounding myself with friends and colleagues who believe in me and who are role models to boost my confidence and stretch my ambition, harnessing fresh starts to tackle new challenges (such as writing this book, which I began on the very day I became a homeowner), and making cue-based plans to avoid flaking out.

 One-size-fits all strategies won't get you nearly as far as tailored attacks on what stands in your way. Once you've mastered that game plan, staying the course is often as simple as sticking to the tactics that have been working for you.

 Students launching their own ventures often come to me struggling to get started or suffering from low self-confidence only to later discover they're on their way and believe they've got what it takes, but that the work has become a chore. If you find you're hitting a wall, revisit the question of what's impending your progress. You may find that the obstacles have shifted and a new game plan is needed. Doctors know that patients’ treatment regimens often need to be recalibrated over time- change works the same way.

 Of course, sometimes you'll set your sights on change and, despite adjusting your approach and trying every trick in the book (literally in *this* book), you'll find that you still aren't where you want to be. Let's say you were hoping to kick-start a gym habit, but you just can't get it off the ground. When you keep hitting a wall on a particular goal, it's time to step back, reassess, and think about the bigger picture instead of making yourself miserable.

 Most goals are just a means to a greater end. Hitting the gym is just *one* way of getting in shape. It's improving your fitness is your broader aim, there are other ways to achieve it. You could use a walking desk at work, join a basketball team, at a brisk stroll to your lunch break, change your commute, or exercise at home with an app. Maybe working out at the gym isn't the best path to fitness for you, but another path could put success within reach.

 Yes you've tried really hard to achieve a goal using all of the wizardry that you can muster but still aren't seeing results, it's a good time to consider new ways to reach the same end and give yourself a fresh start. Not only do the obstacles that you face require tailored solutions; you need *tailored goals* that acknowledge and match your strengths and weaknesses. Pain points are different for every person- a goal that feels like a chore for one person can be a pleasure for someone else.

 With a tailored approach that suits you and your circumstances, change is within your grasp. By diagnosing the internal obstacles you face and *consistently* using solutions customized to help you succeed, evidence and experience show that you really can get from where you are to where you want to be.