

3 Takeaways Podcast Transcript

Lynn Thoman

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Ep 41: The Science of Getting from Where You Are to Where You Want to Be: Katy Milkman

INTRO male voice: Welcome to the 3 Takeaways podcast, which features short memorable conversations with the world's best thinkers, business leaders, writers, politicians, scientists, and other news makers. Each episode ends with the three key takeaways that person has learned over their lives and their careers. And now your host and board member of schools at Harvard, Princeton and Columbia, Lynn Thoman.

Lynn Thoman: Hi everyone, it's Lynn Thoman. Welcome to another episode. Today, I'm excited to be here with Katy Milkman. She's a professor at Wharton, host of Choiceology podcast, and she's also been an advisor to dozens of companies, including Google and Walmart on how to spur positive change. Her new book is, *How to Change: The Science of Getting from Where you Are to Where You Want to Be*. Katy, your friend and mine, Angela Duckworth, best-selling author of *Grit*, says in her foreword to your wonderful book that people describe you as crazy productive, a machine and super human, but you weren't always that way. You studied behavior change and found the secret to a better life. And getting to where you want to be is not to be perfect or even to try harder, but to understand your impulses, outsmart them and whenever possible to make them work for you rather than against you. I'm excited to learn how many of us with the help of your ideas, Katy, can turn the odds in our favor. Katie, welcome, and thanks so much for being here today.

Katy Milkman: Thank you, I'm really excited to be here.

LT: I was mesmerized by your story about André Agassi. Can you tell us about him?

0:01:43.9 KM: Yeah, I would love to, and I'm so glad you enjoyed it. It was frankly, tremendously fun to write that story because I was an André Agassi fan as a child, I was a tennis player as well, so it was exciting to get to open my book with the story when I realized that was the perfect way about one of my favorite players of all time. And the story involves a moment that was really pivotal in his career. So if you're not familiar with André Agassi, he was one of the greatest tennis players of all time. And he had this huge potential and so many expectations, but in the early 1990s, he really wasn't living up to them. He was a young phenom, and yet he was ranked around 30th in the world at the point in the book where I pick up my story. He wasn't in that number one slot and many of his childhood opponents who everyone expected him to blow past in the rankings were outperforming him, people like Pete Sampras and Michael Chang and Jim Courier. And Agassi's coach of many years had just left him unceremoniously and he was kind of in a rut. He was best known for his, "image is everything" Canon commercials and really hadn't actually achieved substance on the pro-tour in spite of his talent. And he had this really important dinner. It was a dinner with a potential new coach. The coach who he was hoping to lure to join his team was Brad Gilbert, who had just written a best-selling book called *Winning Ugly*.

KM: And the premise of the book was that to be a successful tennis player, you had to play smart tennis and you had to understand and master the mental game and understand your opponent and

outsmart your opponent. And of course, naturally, the conversation at the dinner turned to these topics. When Brad Gilbert sat down with André Agassi, he said, "Look, if I had your talent, I would be dominating." Brad Gilbert by the way, had been sort of an ugly player in terms of his strokes and his skills on the court. He won through strategy, and he actually had reached the ranking of number four in the world, which most people would have said he had no right to. So when he sat down with Agassi what he said was, "Look, you are playing a self-centered game of tennis. You aren't thinking about your opponent. You're going out there... You have all these big shots and you go for big winners and you just play your game and you ignore who you're up against. If you just focus on your opponent and play a strategic game and occasionally let them lose instead of forcing the winner every time, you could be dominating. And I can help you get there." And Agassi was riveted and he realized this was absolutely right. He had been playing a game that was entirely focused on him and not thinking through, "Who am I up against? What strategy can I use to outsmart them? To outplay them."

KM: And he hired Brad Gilbert as his coach. And this sort of began his ascent. He ended up winning the US Open that year, even though he was unseated, it was a historic victory. Someone who was unseated hadn't won in decades. And went on to hold the number one spot after that, and he held it for a total of 101 weeks in his career. And of course, there were ups and downs, but figuring out that he needed to develop a strategy and outsmart his opponent as opposed to playing this self-focused game, that was the key. And I use that to make a key point about the nature of behavior change. Because what works, at least in my experience, is very similar. And too often when we are trying to change our own behavior or other people's behavior, we aren't strategic. We just pick up an idea from off the shelf. We set big audacious goals or visualize success. We go after it in a way that doesn't acknowledge the opponent we're facing. If we instead are strategic and recognize, "Oh, in this case, the reason change isn't happening is that it's actually a chore to do the thing I need to do. It's really unpleasant," and that is the barrier.

KM: Or, "It's not top of mind. It's not salient. It's not easy enough. I haven't made it simple. I haven't made it the path of least resistance. I'm not confident. I don't believe I can..." Whatever the barrier is, once we understand it, we can actually tailor our strategy to outsmart it and outperform it and use science to help. It's obviously different than a game of tennis. Your opponent is inside you instead of across the net, but it's very much the same principle. And that's why I told Agassi's story and it was tremendously fun to do it.

LT: It's so interesting that André Agassi was failing because of his goal of hitting more winners. He was already hitting a lot of winners and his goal was hitting more winners, but because he couldn't hit all winners, he was getting discouraged and losing. He had the wrong goal. So fascinating.

KM: I couldn't agree more. And watching it happen live in the 1990s... Watching his transformation made it even more powerful to get to write about his story in the book, which by the way, I should note, he has an amazing memoir called *Open*, which was a source for my opening story that I recommend to anyone. It's an incredible story of change and roadblocks. And he talks both about his personal life and his life on the court. I obviously focus on his career, but he had a lot of interesting changes in his personal life, a lot of challenges and overcame a tremendous amount to find his way. The most important thing is to figure out what is standing in your way. And it isn't always just one thing. Sometimes there are a number of roadblocks that you need to counter. But figuring that out is critical to then taking the next step and using the best science available... The best strategies available to overcome whatever it is that's standing in your way.

LT: Before we talk about the key parts of your evidence-based approach to change, can you tell us, Katy, how you first became interested in change. Were you always perfectly productive in your life and studies?

KM: No. Quite the opposite actually. My friends and I who study this topic, we often joke that there's two kinds of researchers who study behavior change. There's the people who are really outstanding and have never had many problems in life, and they sort of look at these other creatures, these mortals around them, and they say, "Wow, it's weird that these people have all these problems. Maybe if I do some science, I can make sense of all the people around me." So there's that type. And there's the other type for whom it's really me-search. They've been struggling their whole lives. Their decision-making is a mess, and they say, "Oh gosh, maybe I can fix myself if I just do some science on this." And I definitely fall into the me-search category, that's how I started was... Struggles that got me interested... Why can't I motivate myself to stick to a healthy diet? To get to the gym? To get my work done on time, for my classes? What's wrong with me? I don't understand it. How can I fix it? So that's what got me going. I would say it was more of a... Almost like a hobby at the beginning. I was writing papers about this, but I was writing papers about other topics too.

KM: I was an engineer by training and thought my niche was using big data to better understand the decisions people made in the internet era, using new sources of data from online companies. Because I guess I'm a little bit older now. The internet was this brand new shiny thing when I went to grad school. And it really wasn't until I was a professor at Wharton... An Assistant Professor, and I wondered over to the Medical School for a research talk... We had a really fantastic group and still do doing behavioral economics, which is my area and behavioral economics and health research. And I was in a seminar presentation and someone put up a slide that had a graph on it that really changed my life. And I know that's a super nerd thing to say that a graph changed your life, but it's true. It did. It was a pie chart showing the proportion of premature deaths in the United States that are caused by different sources. And what boggled my mind was that the largest wedge was behaviors that people could change... 40% of premature deaths in the US are due to behaviors we could change. So decisions we make about what to eat, whether or not to be physically active, whether to smoke and drink, whether or not to be safe when we get into vehicles, these things accumulate in a way that I truly had no appreciation of.

KM: I would have been off by an order of magnitude if I had estimated the impact that this all has cumulatively. And so seeing that was just really eye-opening that there was an opportunity, if I turned my me-search from a hobby to a focus and a programmatic approach to have a huge positive social impact. Once I saw what the impact was on health, it was easy to make the leap that, okay, these things that they accumulate so much there, they must also accumulate in a meaningful way, when you think about decisions that people make about their finances and about their happiness and about their education. And so the opportunity seemed even bigger than just the health space. If we could understand behavior change, there were so many ways that we could really make people's lives better. Change is really hard. That is absolutely true. I definitely want to emphasize that. And it's almost always... Even if you're successful, two steps forward, one step back. There's always bumps in the road. That's part of it. It's just challenging. So many things are working against us from our tendency to overweight the things that are instantly gratifying and dramatically underweight the long-term benefits we'll achieve from a decision to forgetfulness and the tendency to take the path of least resistance.

KM: So there are so many obstacles. But if I had to say why I think most people don't set themselves up as well as possible for success, I would say it's because of this tendency not to think strategically enough. I think we could change more effectively, be more successful, if we start to understand, "Okay, what are those barriers and what are the tools and techniques that can help us outsmart them?" That's not to say that it's going to guarantee that change will happen. My hope is, if someone reads this book and implements the strategies... Maybe I make them 10% or 15% more effective. It's not a cure-all, but there is a lot that we now know that can set people up to have a much better probability of success. I would say an important starting point is understanding, "Okay, first of all, what is the change goal?" Are you trying to change your diet, your exercise? Are you trying to change your productivity? In that case, is it that you want to work longer hours or spend less time on social media, or change how many meetings you have a day? Do you want to be a better mentor or a better parent? The more specificity around the goal, the better.

KM: And it's important to try to do one thing at a time. I should also note, there's some really great research by UCLA's Steven Spiller and collaborators, showing that when we have a lot of goals and then try to make plans for all those different goals, it actually can be de-motivating because we feel like, "Oh my God, I can't do all these things. It's too much."

KM: So it is important to start by figuring out what is it that you want to achieve. And my book and my work really pick up there with an assumption that there is some objective that's known. And then we could diagnose, "Okay, what is the barrier?" What is the thing that is holding you back? Or what are the set of things? And then let's start figuring out what are the solves we can offer?

LT: Let's talk about some of the most successful strategies. Can you talk about how making hard things seem fun is a much better strategy than making hard things seem important?

KM: This insight, I should note is really from Ayelet Fishbach of the University of Chicago and Kaitlin Woolley of Cornell University, who's Ayelet's former doctoral student. It's so important. I'd done some research that danced around it, but they brought it into clear focus when they did this work showing... If you ask most people, how are they going to pursue a new goal, say getting themselves to the gym more often, or eating healthier or studying more effectively... Most people say, I'm going to look for the most effective way I can achieve that goal. So for instance, going to the gym, I'm going to look for what's the maximally efficient workout I can do. Maybe it's the stair master, it's punishing, but it's so many calories per minute. It's great. That's what I'll do. But a small fraction of people take a different approach, they instead look for the most fun way to pursue their goals. So they go to the gym and they say, "I think I'm going to take a Zumba class with my friends because I'm going to really enjoy that." And it turns out that even though, of course, in that first attempt... Maybe you don't get quite as far towards your goal, you're actually much more likely to persist, because the experience is enjoyable.

KM: So they've run randomized controlled trials showing that if you encourage people to pursue their goals in ways that are fun, or help them pursue them in ways that are fun, they stick to it longer. It's such an important insight and it's clear why it works. We know from behavioral economics that people are present biased. That in general, whatever is happening in the moment, we dramatically overweight the gratification that provides relative to these long-term payoffs. And so if that's the case, instead of fighting this uphill battle and trying to just do it as Nike would prescribe and push through and do the hard thing, that is unlikely to work. Because we're going to

overweight, "Well, you know the gym... That workout was really unpleasant. I'm going to sit on the couch today." But if you can make it enjoyable so you're not fighting that uphill battle then you're going to stick to your goals. And so I think it's a really important insight. And I've done some research on techniques... It was more of a hack that I was interested in studying which I call temptation bundling. And that's linking something that you find really fun, like binge watching TV or listening to your favorite podcast or audio novel with something that feels a bit like a chore, but you need to get done, like laundry or vacuuming or whatever it is you need to do.

KM: Or cooking fresh meals for your family. Or in my case, getting myself to the gym when I was a graduate student. I only allowed myself to listen to tempting audio novels like James Patterson's books or Harry Potter, The Hunger Games, when I was exercising. And I found that that cured two problems at once. One, I stopped wasting time at home on indulgent entertainment when I should have been doing my homework. And two, I started craving trips to the gym to find out what happened in my latest thriller and the trips became a pleasure instead of a chore. And so it worked so well for me that I ended up studying this and showing, "Oh, it's... I'm not alone, this kind of strategy can help lots of people."

LT: I was fascinated that this strategy of making hard things fun can be used everywhere. I love your example of the piano stairs. Can you tell us about them?

KM: Thank you. Yeah, this is a really fun video that I show for my students at Wharton and executive audiences, just to make it vivid a way that you can make things fun. And it was a cute Volkswagen advertising campaign where they went to a subway station in Stockholm, and they installed piano stairs. Usually people coming out of the subway, they have a choice between taking the stairs and taking an escalator, and the escalator typically wins out. Because it's the path of least resistance. But overnight, these engineers installed pianos stairs. So if you walk up the staircase... First, it looks like piano keys and second it plays music. And naturally, when people now encountered this marvel on their commute, they made a different choice... 66% more people according to this video chose the stairs over the escalator when they appeared, because now you can make music and have fun while you're walking up and down. And people go back up and down to play their songs and get a little bit of exercise. It's one of those things where maybe the novelty would wear off after a little while, but it's a delightful example of how we can invent fun ways to pursue things that are better for us in the long run, and that delight factor can change the equation.

LT: Can you tell us about fresh starts and how they can help us achieve change? I was intrigued that a fresh start can be something as mundane as a Monday resolution.

KM: Yeah, this is work that has been some of the most interesting I've done in my career. It came out of a visit I made to Google about a decade ago, where I was presenting some of my early research on behavior change and some of the strategies that could help nudge employees towards making healthier decisions and being more productive and saving more for retirement. And so I shared these tools. And a leader in their HR group... They call it the people analysts asked me this amazing question. He said, "Okay, totally sold that we should offer up these tools and nudge people towards better decisions, Katy. But is there some ideal time to do that? Is there some moment when people are particularly motivated and likely to follow through and to make good use of these tools?" And it was like a light bulb went off. And it was such a great question. And I had never actually seen research that really answered it. And so I went back to my team, and my doctoral student then Hengchen Dai who is now a UCLA, Anderson Professor and my friend Jason Rees, a senior fellow

at Wharton. We started talking about this question. The first thought that had come to mind for me, as you mentioned was New Year's resolutions. We know that people are more motivated to pursue their goals at the start of a new year, that moment when there's this transition, we learned it feels to people like a fresh start, right?

KM: You have the social norm of setting resolutions, but also this sense that if I didn't achieve it last year, that was the old me and I have a blank slate now and a fresh start and the new me can do it. So you can dissociate yourself from those past failures and be more optimistic. And you're also more likely to step back and just think big picture about your goals. And what we found in our research is it's not just at New Years, that's one big fresh start moment that we're all familiar with, but there's actually a lot of moments in our lives that give us that sense of a clean slate and a chapter break and a new beginning. And they can be small, like a Monday, turns out to be a fresh start to most of us, we feel like, "Okay, it's a new week, it's a new beginning," that can be highly motivating, but there's also other dates, dates like celebrating a birthday or even the beginning of a new month or the celebration of a holiday that feels like a fresh start. So think more Labor Day and less Valentine's Day, but there are some holidays we associate in our minds with fresh starts.

KM: We found that people are more likely and more motivated to pursue these goals naturally at those moments. So if we look at when people go to the gym, for instance, or when they search for the term 'diet' on Google, or when they set goals on a popular goal setting website about everything from health to finances to education, it happens naturally at these moments, the beginning of a new week, month, year, or the celebration of holidays that feel like fresh starts, the celebration of birthdays, a semester break for students, those things trigger more activity around our goals, and then also we can nudge people at these moments. So if we invite someone to start getting reminders to pursue their goals or to sign up for a 401k to save for retirement, and we highlight a fresh start date, "Oh, your birthday is coming up. Do you want to start then?" Or, "It's the first day of spring. How is that as a start date?" We see a higher take up and higher savings rates, for instance.

LT: So commitment devices are another one of your hacks. Can you tell us about those?

KM: Commitment devices are so fascinating, if you're thinking about impulsivity and you're thinking about how do I overcome it, one of the ways is the carrot, and that's the 'Make It Fun' approach. Figure out how to actually give yourself instant gratification from the activity that feels like a chore, so that the equation is changed. But the other way you can change the equation, when it comes to temptation is actually just the stick. So you can change the reward structure so that the penalty or the cost or the barriers are so high to doing the thing that's bad for you that you won't. And we are very used to other people imposing these kinds of costs and barriers and sticks on us, right. The government is often doing it like, you get fined if you speed, so your impulse to speed will be held in check. If you take drugs that are bad for you, same kinds of penalties. Alright, so we're used to others setting up these systems of rewards and penalties.

KM: But what's weird about commitment devices is that they are tools we can use to create those kinds of penalties and structures for ourselves, when we anticipate some temptation that might take us off-track. And there's a lot of different ways you can do this. One of my favorite studies of commitment devices involved savings, and it was a study run by Nava Ashraf and Dean Carlin and Wesley, three really terrific economists who were interested in whether or not they could help people save more, if they gave them access to a different kind of savings account than we're used to. A commitment savings account. So this was an account where if you put your money in, it earned

the typical interest rate, the same one available in a standard savings account. But if you wanted to take your money out, you couldn't until you reached a predetermined savings goal that you had selected or a pre-determined date that you had selected. And they offer these kinds of accounts to hundreds of people. They randomly assign people to either get access to a standard savings account or a standard savings account, and this commitment account, and they looked, first of all, how many people were interested, and then in total, among these two groups, one offered the account and one not, what was the savings rate?

KM: And they found, first of all, about 30% of people actually elected to use these wacky accounts where you don't have access to your money regularly, it's like a financial chastity belts, again, you're getting no better interest rate and you're going to have less liquidity. So that's surprising from an economic standpoint that people found that attractive. But it makes sense when you look at the results of the savings outcomes, so the group that had access to that account, including the 70% of people, by the way, who didn't use it, just that whole group compared to the group that had only access to a standard account, the commitment account access gave 80% more savings year over year.

KM: People who might have been tempted, certainly were tempted to go dip into their savings, Oh, there's a birthday coming up or a festival or some reason that I'm going to let my savings goals go by the wayside, and then start dip into that account, those people couldn't, because they'd set themselves up for success by creating these constraints, and so their savings ballooned. I love that example, but there's also research showing you can do this in a more straightforward way, which is with a cash commitment. So you can actually put money on the line that you'll forfeit if you fail to achieve some goal. And there are websites like stickK, S-T-I-C-K-K dot com, and Beeminder that let you do this, they set up like a contract for you, they take your credit card information and then send money to a charitable organization you choose if you fail to achieve a goal, and you choose a referee who reports on your success, it could be a digital referee, like a digital scale or a FitBit that you link up.

KM: What's really interesting about these self-imposed fines is again, there's evidence that they can really help. One of my favorite studies, also led by Dean Carlin, who was by the way, one of the co-founders of stickK and a really... I think brilliant behavioral economist. He showed that if you randomly assign people who are trying to quit smoking to either have access to the usual stuff, the usual tactics and encouragement or all of that, plus a cash commitment where you put money in an account and then you'll have to forfeit it in six months if you fail urine test for nicotine or cotinine, it increases the successful quit rate by 30%. So really powerful tools, but a lot of people shy away from them because putting a cost or constraint on your future self is a little bit scary.

LT: But you have found that even without putting a cost or a constraint on your future self, just the very idea or the very act of making a commitment, one of your examples, a doctor just committing to prescribe less antibiotics, there's no cost there, and yet the commitment simply changes the action. I found that fascinating.

KM: Yes, that's true. And there are ways to create these kinds of commitments that don't have strict costs, they're more, cost like shame, or you're accountable to someone else and you'll be embarrassed if it doesn't work out, psychological costs. They tend to be a little bit less effective on average, naturally, because the penalty is lower, but they can still be effective, and you're referring to this really interesting study, where doctors who were over-prescribing antibiotics for unnecessary

things where it doesn't help, but you're tempted to do it because your patient comes in and begs for the prescription they want relief and they think this might work, and it's not good to do it because one, it has side effects for the patients, and two, it actually increases antibiotic resistance, but it's tempting to just give them what they want, it's not that costly.

KM: And so a lot of doctors over-prescribe these unnecessary antibiotics, and there is this experiment where doctors were randomly assigned to either just be encouraged not to do this, or a condition where they signed a pledge and put it up in their waiting room saying, "I am not going to be prescribing antibiotics for these unnecessary conditions," and signing the pledge and posting it publicly in waiting rooms led to a huge decrease in the unnecessary antibiotic prescription rate in those doctors' offices in the follow-up period. It's another kind of commitment device, it doesn't involve cash, but it does involve your reputation, accountability, and so can also work.

LT: Planning prompts are another one of your strategies to accomplish goals. Can you tell us about those?

KM: Yeah, this is based on the work of NYU psychologist Peter Gollwitzer. And Peter discovered that a lot of people make plans the wrong way. Most of us, when we have some goal, we want to achieve, we just have an intention, right? So we think, "I want to learn a new language on Duolingo, and I'm going to spend more time on that goal." But a small fraction of people make plans a better way, which is they actually have specificity, they form sort of an "if then" plan. If it is a week night at 5:00 PM, I'll spend an hour practicing on Duolingo. When you have that specificity in random assignment trials, you're more likely to follow through. And there's a bunch of reasons for that, but one of the most potent barriers, I think it helps overcome is the forgetting problem or salience. Now, when I have a specific plan, there's a trigger cue, that moment that I said I would do it. That cue is memory. That's how memories are stored. So at 5:00 PM on a week night, I feel accountable. This is the time I said I'd do it. And it has that accountability hook too, because we don't want to break our past commitments even to ourselves.

KM: It's also just stored more deeply in memory, once you think through all those details. You might also think through obstacles like, "Oh, shoot. Well, at 5:00 PM actually, I'm going to be commuting. And that's not a time when it's convenient." So you think those things through in advance. So for all those reasons, making these kinds of "if, then" plans is a really valuable tool and we've shown you can also nudge other people to make them. So I've done research on, for instance, if you randomly assign some people to get a prompt to write down the date and time when they plan to get a flu shot at a workplace clinic that's going to be open for just a couple of days, that really increases turn out relative to just sending them a standard reminder, letting them know about the clinic, and we think it's the same psychology when you're prompted to make that plan, you're more likely to remember it, you have a cue associated with that date and time, you might put it on your calendar, think through obstacles, and also you're making a more concrete commitment. So failing to follow through feels like breaking your commitment to yourself instead of sort of, "Oh, well, I just put it off."

LT: I was fascinated that you found that we can even just use expectations to shape or change reality. I loved your examples of the housekeeper and the math student. Can you tell us about those?

KM: This is really not my work for the most part, but it's so interesting. Alley Crum, who is a Stanford psychologist, did this amazing study of housekeepers at hotels where she randomly

assigned some of them to just get the information that every day, the job that they do, meets the CDC's definition of adequate physical activity, that they're getting exercise at work, and it's really good for them. And she didn't tell some other housekeeper, so she randomly assigned some people to get that information, some people didn't, and then she looked a month later at physical markers of health and positive exercise outcomes and found that there was significant health benefit by the people who'd learned that their work was exercise. So they lost a couple of pounds and their blood pressure improved, and it's actually an example of a well-known phenomenon, which is the placebo effect, that once you mentally code something is working, you may behave differently and you may literally have different physiology and different physiological reactions to it. For example, when someone told me that the house I'd moved into, which is a townhouse that I was so lucky that going up and down that stairs, those passive exercise and maybe really spoke, I am lucky to get to run up and down the stairs when we forget the ketchup on the roof deck at dinner, and I would volunteer to do that and happily do extra loads of laundry, I'm getting my exercise in.

KM: My guess of what happened would be that recognizing that their work was activity, maybe they're more likely to run up and down the stairs or to really lean into the vacuuming in a way that it ends up having benefits. It's not a huge benefit, but it's a small benefit, there's lots of research on the placebo effect, which is so well-known that when you take a sugar pill, but you believe it's going to improve your outcomes, it really does, that our beliefs shape our reality. And the other story you mentioned was about this math graduate student, George Dantzig, and this is a wonderful story that I actually learned from Carol Dweck, who is a professor at Stanford and author of the best-selling book *Mindset*, and a brilliant researcher who's thought and done a lot of work on how much our mindset matters to our outcomes.

KM: The story of George Dantzig is that he was this graduate student, he walked in late to a class and saw a couple of problems on the board, and jotted them down, assumed they were homework, they were hard, took him a little longer than usual, but he eventually turned in the solutions to his professor and his professor came a couple of days later and said, "Did you know those were unsolvable problems that you've solved?" And so the moral of the story is, if he hadn't thought they were homework where there was an expected solution, it seems likely he wouldn't have solved them. Having that expectation may have shaped his motivation and his performance and ability to solve these important problems.

LT: Katy, you've talked about so many terrific strategies, they're all practical, they're all pretty easy, and none of them cost anything. If I could ask you a personal question, how have your strategies worked for you in engineering change in your own life?

KM: I use this stuff all the time, it's the only thing I've found that works is to figure out, "Okay, what's going wrong and how can I outsmart it?" So I use temptation bundling to get my physical activity, and I have a five-year-old son by the way, and I also use it as a trick with him. He may have strange habits as an adult because when he watches TV in the evening, he gets to watch a little bit of screen time, he eats green vegetables, that's the rule. Those things go together. So there's no arguments anymore about eating the green vegetables and I have this fantasy that he'll go to Super Bowl parties and ask people to pass the Brussel sprouts when he's an adult.

KM: So, I use it in my own life, and then there's lots of other strategies in the book that I use as well, I certainly make these concrete "if, then" plans when I have something that I want to achieve rather than the vague intention, one chapter of the book about the power of our social ties and

learning social information that the people who surround us, show us what's possible, they shape our self-confidence, they shape the information we have, and I absolutely use a tactic I call the "copy and paste." When I see someone else that's doing something smart that works for them, I try to adopt it immediately, figure out how I can incorporate it into my own life. I also use a strategy related to self-confidence that I talk about in the chapter of the importance of beliefs and expectations, it can be really powerful when you actually are asked for advice on how to achieve goals and you've become a mentor to someone else, that can actually improve your own achievement, because you believe in yourself more when you see someone else is looking up to me, and I have an advice club, wonderful faculty members who are my peers at other institutions and have similar research goals and career goals.

KM: We send each other emails when we have a challenging decision to make about our careers and give each other advice and coaching. And it's really wonderful to have the sounding board and these amazing women to give me feedback when I am struggling to make a choice and that is invaluable and questionably, and of course, the social bonds that we've formed are invaluable. But I've also found I benefit a lot from giving advice to my colleagues because when they face a problem, it's likely to be one that I might face in the future. So thinking through it helps me set myself up for success, boost my confidence and my ability to think through these challenges, and so that's another strategy that I use and highly recommend others consider.

LT: Before I ask for your three takeaways that you would like to leave the audience with today, is there anything else that you would like to mention that you haven't already touched upon?

KM: I think the biggest thing that we haven't talked about yet is just durability. When I first started studying change, I was looking for a silver bullet kind of solution, where we could teach someone some tactic or put them through a program for say a month and change them forever after we let go and the program and whatever strategies we were giving them, and they would be forever after better off. And what we realized is that, that was a silly idea, that these barriers, the things that stand in our way, they don't evaporate, they're part of human nature, and so if we're going to equip people with tactics and strategies and try to help them change, or if we're going to try to change ourselves, we need to be in it for the long run, not thinking of it as, "Okay, for a month, I'll temptation bundle and then I'll have a habit around going to the gym and I can drop it" or whatever else. It really is a long-term commitment that we can see durable change when we keep using these tactics and strategies as opposed to thinking of them as short-term solutions that will get us to a long-term goal.

LT: Katy, what are the three key takeaways that you'd like to leave the audience with?

KM: One, try to be really strategic about change if you understand what the barriers are, and then you match the solutions you try to deploy to what is standing in your way, whether it's a confidence barrier, and maybe you need to surround yourself with people who show you what's possible, maybe you need an advice club or forgetting barrier, and then making plans and scheduling reminders that are timely can be really valuable, thinking about those tricks, that's the first takeaway, be strategic. The second takeaway is that change is a journey, it isn't a one-time fix or a quick fix, that if we want to get there, we need to be in it for the long haul and use these strategies persistently rather than temporarily. The third is that, there's a lot to be learned from science, and so look for evidence, sometimes the things that work are counter-intuitive and the things that don't work are counter-intuitive, and so evidence can help, and so I encourage people to look to evidence.

LT: Katy, this has been terrific. Thank you for all these strategies to stack the odds in our favor. And your book is wonderful. Thank you so much.

KM: Thank you so much for having me. This was really fun.

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OUTRO male voice: If you enjoyed today's episode and would like to receive the show notes or get new fresh weekly episodes, be sure to sign up for our newsletter at 3takeaways.com or follow us on Instagram, Twitter and Facebook. Note that 3takeaways.com is with the number 3. 3 is not spelled out. See you soon at 3takeaways.com.