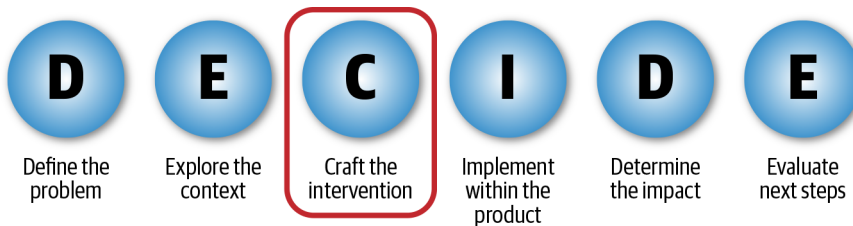# Crafting the Intervention: Ability, Timing, Experience

My wife has a Fitbit—a small exercise tracker that hooks onto her clothing, displays progress on a screen, and sends over detailed information to a computer or smartphone.

The Fitbit does many things right to help encourage exercise. It automates two very annoying (and therefore action-inhibiting) parts of the exercise process: it automates the process of tracking how much exercise the person has had, and it automates uploading that information onto a computer or phone. Those are examples by shifting the burden of work from the user to the product (aka "cheating").

The device also uses a number of other behavioral techniques to help people exercise. For example:

- *It reminds people to exercise. It gives random Chatter messages on the screen; I still smile as I remember when I first saw the message Walk Me; that is, it provides a (funny) cue.*

- *It provides immediate and meaningful feedback. Shortly after my wife got it, I remember her looking at the screen and seeing she'd walked something like 9,945 steps. She just started running around the room, to break the 10,000-step threshold. That is, it creates urgency (Timing) by establishing a near-term goal—even if*

it's arbitrary. Even though the benefits of exercise are long term and abstract, a 10,000-step goal is immediate and real in the present.

In the previous chapter, we covered interventions to use when encouraging an action that's blocked by a Cue, Reaction, or Evaluation. Here, we'll cover the second half of CREATE: Ability, Timing, and Experience.

The User's Ability to Act

Ability is most obviously the physical means to do something: having shoes to go running, having healthy food to eat. From the perspective of behavioral obstacles, we can also think about it as the means to act without further thought and without fear of failure. Every time your user stops to think about what to do next, there is an opportunity to be distracted. Each micro-behavior in the behavioral map can become an obstacle simply because it requires an extra iota of thought, effort, and confidence. Your user might really want to study a new language and was about to download the next lesson, but during the moment it took to look up the website and download it… the phone rang. Your user might really want to apply for a new job, but that line about needing to present in front of others terrifies him.

In this section, we'll look at each of these types of Ability: the physical ability to act for each micro-behavior, the sense of self-confidence it takes to proceed, and the mental ability to follow through from step to step without stopping to think and needing to concentrate on what to do next.

Remove Friction and Channel Factors

Small frictions play an outsized role in behavioral science; much of the initial work in the field looked at how simple form fields and minor hassles blocked people from following through.

We've talked earlier about the importance of automation: when you can take the burden of work from a user (e.g., manually making a 401(k) transfer), it's more likely to get done! Automation is often combined with a default: the user, by default, transfers work to the product unless they opt out. Both of these techniques, however, are powerful on their own. Let's look at setting defaults, separate from the issue of automation.

An early (and startling) example of this comes from the realm of organ donations. Organ donations are an ethically important subject. We literally have the potential to save someone's life. There are huge variations in participation in organ donation programs across countries, with many countries either having 98%–99% of the population agreeing to donate their organs upon death, while in others, only 0%–10% plan

to do so. Even neighboring countries with similar histories and cultures—like Germany and Austria—show these variations. Germany has a 12% rate; Austria has a 99% rate.

The reason for these differences isn't because of a deep-seated ethical or religious understanding of organ donation. It's likely because Austria defaults people *into* their organ donation program and lets them readily exit if they choose. Germany defaults people *out* and lets them readily enter if they choose. It seems that what matters is the simple act of checking (or unchecking) a box on a form. That's the incredible power of a small friction (merely checking or unchecking a box) and the default presented to people.[1]

What can we learn from this? Obviously, set *appropriate defaults*. But more generally, look for ways to *remove these small frictions*.

Remove unnecessary decision points

Removing the need for users to do extra work is a high-level behavior change strategy (cheat), and it should be used within particular interactions as well. If you don't need to ask a question of the user, don't. If you can save the user from scrolling down the page, excellent. That's just another small but frictionful activity that the user needs to take on their path to action. Removing these frictions can slightly decrease the cost of action, all else constant, but most importantly, removing such frictions removes intermediate decision points and opportunities to be distracted. If the person has chosen to do something, let them go ahead and do it—the more times you stop them, the more often they can be derailed.

That isn't to say that users can't do work. There may be really important information below the fold, and the user really does need to read or act on it. However, if there is a choice between accomplishing the same task with or without additional form fields and user work, choose the route with less work.

Set appropriate defaults

Even if there isn't a big choice you can default in your product—like organ donation —look for the small choices as well. For example, keep in mind the individual input fields within an application. Assume that many users will stick with whatever default value you give them. This occurs because people are in a hurry and don't fully read the questions posed to them, because they are unsure of what the question means or because they simply do not have a strongly held preference. Thus, defaults matter not

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1 Johnson and Goldstein (2003). Technically speaking, this analysis shows the marginal impact of a default, given automation that is already in place—since no one can remove their own organs after death, with or without a default. But the point is the same: defaults can be logically separated from automation and have powerful marginal effects.

only because they create decision points (and hence distraction, etc.), they also change outcomes for the person.

Default values can be immensely useful (a) where the default response can move the individual closer to action, (b) where power users can fine-tune their responses, and (c) where everyone else can breeze past the defaulted values. However, default values should be used only where nonresponse is acceptable; it shouldn't use used where essential information is gathered. And, since users will make up fake answers (or simply disengage) when forced to answer questions that they can't really answer, it is better to altogether remove questions that users don't have answers to and can't be defaulted. When default values are provided, the answers should be interpreted as one-part truth and one-part nonresponse.

For example, let's say your application asks users if they have kids. If there's special advice that's only relevant for people with kids, then default the answer to "no kids." Let those users who do have kids, and are paying enough attention, indicate it to receive the special content.

Elicit Implementation Intentions

As you may recall, implementation intentions are specific plans that people make on how to act in the future.[2] They are a form of behavioral automation, telling the mind to do X whenever Y happens. The person does the work of thinking through what needs to be done *now*, and then when the action is actually needed, there's no need to think and no logistical barrier to action—the person just executes the action. Implementation intentions should include the event that triggers action, the context for that action, and the physical things the person should do. For example: "On Friday at work, if my supervisor yells at me about the project, I'll leave the room and take a short break rather than yelling back."

You can encourage the user to create a future action plan (implementation intentions) wherever the user is committing to take some future action, *especially* when that action is outside of the application. Making a specific, concrete plan of attack can help the person follow through with the action, even when the product isn't there to remind them.

For behavioral products, deploying implementation intentions can mean adding text boxes where the user describes how they'll take the action. The key is to make people think consciously about the concrete actions, and, if possible, visualize undertaking those actions. The challenge is that implementation intentions are a friction; they slow people down and make them do additional work.[3] As we talked about in the

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2 Gollwitzer (1999)

3 Thanks to Paul Adams for the tip.

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previous section, that's not such a good idea on its own. Rather, you can think about it like this: if an unimpeded path (removing friction) doesn't get people over an obstacle on their own, you need to prepare them for that obstacle (with implementation intentions or other such techniques) to get over it when they reach it.

Peer Comparisons Can Help Here Too

We talked about peer comparisons in the context of the person's emotional reaction: knowing that other people are spending less money on electricity than you, or voting more often than you, can trigger a strong intuitive response. In addition, peer comparisons can have an effect on our sense of ability. I think about peer comparisons as having both a "yes you can" (Ability) dimension, as well as the "yes you should" (Reaction) side.

If we think a task isn't achievable, we have better things to do with our time. On your pages, make sure not only that the person *can* do what's needed but that they know they can do it, too. One way to accomplish that is through the peer comparisons described earlier; show the user that other people are successfully taking the action. Then they know, yes, it's probably something they can do as well.

Remember, however, that peer comparisons are complex. If the peer group is too far ahead of the individual, that can be demotivating (I'll never catch up), and if the peer group is behind the individual, that can also be demotivating (ach, I can just relax a bit—I'm doing better than everyone else already).

The Other Side of the Wall: Knowing You'll Succeed

In the last week, how many times have you tried something that you were pretty sure you would fail at? Something important, where other people would know that you failed and likely judge you about it? I'm guessing not many times at all. That's because our minds prune these options from the tree; we don't really think through how to do improbable actions (beyond daydreaming—here I'm talking about intentional action).

If you think you aren't going to be able to do something, you're less likely to even try. The underlying research comes again from Bandura's concept of self-efficacy. The belief that you yourself can be effective at the task with similar lessons comes from research on goal completion.

Helping your users know that they'll succeed can be as complicated as an in-depth training program and building up their expertise and confidence for a hard action. It can also be as simple as reframing the action to make it feel more familiar and

feasible. Figure 10-1 shows one such simple experiment I reported on with John Balz in a previous paper.[4]

Get My Account	Start Today
8.5% clicked	**5.5% clicked**
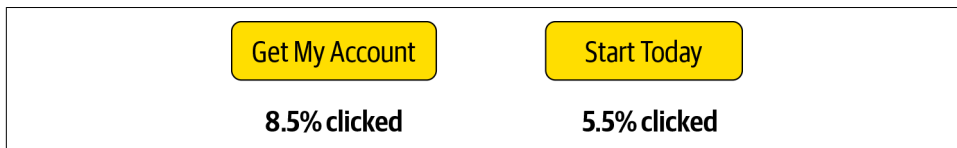
Figure 10-1. Simple changes in wording to help people know what they're getting into (and whether they'll be able to complete it)[5]

Look for "Real" Obstacles

The obstacles we've talked about thus far under Ability are in some sense psychological—from a strictly rational, cost–benefit perspective, they shouldn't be obstacles. But people do face real obstacles of course to using a particular product or service, like not having their password or an internet connection to use your app. It's always obvious in hindsight, but I've certainly fallen prey to missing these obstacles myself. In one study I ran a while back, we emailed a call to action to our users, using email addresses they didn't have passwords for…and sat wondering why no one responded. So this one is a simple reminder: look at your usage data and do qualitative research with your users to make sure you didn't miss simple stuff while you searched for more fancy behavioral obstacles.

Getting the Timing Right

Ideally, the action is inherently time-sensitive: people need to take the action immediately because of some existing, external rationale—like taxes on April 15. However, when that's not possible, there are a few other tactics that you can use.

Frame Text to Avoid Temporal Myopia

We're wired to value the present far more than the future—that's our temporal myopia. We talked about that earlier, when we looked at ways to motivate the user with immediate rather than future rewards. Well, what if you're stuck, and the basic structure of the application and its core motivation are already fixed? You can still avoid the curse of temporal myopia by crafting the descriptions you provide to the user.

When designing for behavior change, this means being very careful about the framing of time. Look for ways to frame benefits in terms of immediate or near-term

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4 Balz and Wendel (2014)

5 Wendel and Balz (2014)

gains; in the exercise example, reference how the person will feel and look better *almost immediately.* The opposite is true for *pain and effort*: effort that occurs sometime in the future is much easier to commit to than effort right now. So if the pain and effort need to be discussed at all, put it in the future as much as possible. Benartzi and Thaler do this beautifully with their Save More Tomorrow plan—people commit now to saving (i.e., *pain*) at a future date.[6]

Remind of a Prior Commitment to Act

We don't like to be inconsistent with our past behavior. It's very uncomfortable, and we have a tendency to either act according to our prior beliefs or change our beliefs so that they are in line with our actions.[7] One way to achieve this is to have the user impose urgency on themselves—promise to take the action at a specific time, then come back to them and remind them at that point. In addition to their other reasons to act, that will spur them to follow through, to avoid feeling inconsistent.

Make Commitments to Friends

Another way to create urgency to act is to make specific promises to do so to your friends. Social accountability is a powerful force—we don't want to let our friends down or lose esteem in their eyes. The next sidebar illustrates that point with a personal story from my friend Justin Thorp.

Our Friends Hold Us Accountable

I've always been a big guy. Back in the fall of 2009, I was clocking in around 280 and was getting fed up with being winded when I ran up a few flights of stairs. I knew it was time to do something different.

So I decided to get into running. That was a daunting task for me. I could barely run down the block. Being a nerd, my first thought was…what's better than exercising? It's exercising with technology. So I perused the app store and got Runkeeper—an app that used my phone's GPS to track how far, how fast, and where I ran. I was instantly hooked. It allowed me to see my progress throughout my running journey.

After a while, I noticed little Facebook and Twitter share buttons at the bottom of the Runkeeper report. With the press of the button, I could share my runs with my friends. I was like "what the hell" and hit the button not really thinking much of it.

A few days passed and all of a sudden my friends and coworkers started noticing my runs. They were commenting on my Facebook posts. They were cheering me on via

6 Benartzi and Thaler (2004)

7 See Festinger (1957)

social media. When I wouldn't run, my boss would ask, "Justin, why didn't you go running today?"

When I got up in the morning and didn't want to go running, I'd hear the voices of my friends and supporters in my head. I didn't want to let them down. They believed in me and believed that I could do it.

And I did. I lost 50 lbs. I ran the Cherry Blossom 10 Mile Race. I gained a ton of confidence. And I still run regularly. It's become a great way for me to get exercise and clear my head.

> —Justin @thorpus

Our friends have a wide range of effects on our behavior, as we've talked about previously under the power of social proof and descriptive norms. But telling our friends what we're doing has a particular power to push us to act when we say we will. It's not just the action by which they judge us but whether we kept our word overall—and that includes timing.

Of course, it all depends on who we look to for support and accountability. If we turn to people who really don't care about us or who don't value the activity we're trying to undertake, then their disinterest can sap us of motivation. Products can mitigate this by explicitly asking people to identify friends and colleagues who will support them or by matching up the person with other users who are seeking to change the same behavior or have experience providing support (i.e., products can construct a local network of peers who *will* push us to succeed). Coach.me does something akin to that.

Make a Reward Scarce

You can make a reward for the action scarce ("the names of the first hundred people losing one hundred pounds will be featured on our website") or artificially time-sensitive ("act in the next five minutes and you'll get another 10 points"). This is another favorite sales and marketing tactic.[8] It's best for one-off actions and not repeated behavior. If you try to repeatedly push for a behavior with scarcity people will stop believing you. Also, you run the risk of desensitizing the person to normal scenarios that aren't artificially scarce or time-sensitive.

This technique has been abused in the field, however, by creating scarcity for the benefit of the company that is disingenuous and hurts the customer. thredUP, which we talked about in Chapter 4 on ethics, is one such example; hotel booking sites like

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8 Cialdini (2008); Alba (2011)

Expedia, Hotels.com, and Booking.com are additional negative examples that have rightly been called out by regulators.[9]

Handling Prior Experience

People's prior experiences shape their reactions in ways that can be difficult to foresee and even comprehend. Our intuitive reactions, knowledge about the costs and benefits of an action, and our sense of self-efficacy are all guided by the associations and information we've built up over time. The previous sections on obstacles arising from Cue, Reaction, Evaluation, etc., all speak to common challenges that people face because of how our minds are wired, or even because people generally have some similar experiences in life. This one, Experience, is the wildcard. It's a reminder that no matter what general lessons we glean in the research community about behavioral obstacles people face, and the tools to help overcome them, all are dependent on the particular experiences of an individual.

For example, loss aversion is certainly powerful in general. However, someone who was raised with the constant threat of loss may be especially sensitive to it or may have learned to intuitively reject it. People who actively practice Buddhism may be less responsive to most of the techniques discussed under the Evaluation phase if they are able to release the hold of material desires on their lives more effectively than the rest of us.

On a more day-to-day level, people who have seen disingenuous and manipulative ads for bad products that employ social proof (expert testimonials and the like) may reject any appeal that uses that technique. And finally, people may rightfully distrust anything you say if they had a bad experience with a prior version of your product or service, which had hyped up, inaccurate claims about its benefits.

So, what can we do when someone's prior experience creates an obstacle to something they would otherwise want to do? While there is less research in this area, here are a few ideas and approaches.

Use Fresh Starts

Fresh starts are special times in our lives when we feel a new opportunity to change something about ourselves.[10] Research by Hengchen Dai, Katherine Milkman, and Jason Riis at the University of Pennsylvania about fresh starts finds this: *people are*

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9 See Monaghan (2019) for a story on how the UK's Competition and Markets Authority has clamped down on these techniques. Once more, I am indebted to Paul Adams for the tip!

10 This section draws from Wendel (2019).

disproportionately likely to make major life commitments during times of transition.[11] For example, these scientists looked at how people are more likely to make commitments like exercising more or eating better over New Year's (New Year's resolutions), birthdays, and marital changes.

The behavioral logic is this: when we've struggled to do something in the past, fresh starts give us a reason to hope things will be different this time around. We mentally separate out our experiences from before the fresh start and label them as irrelevant or outdated ("That was *last* year!"). The time after the fresh start has a newness free of our historical baggage that lets us try something different or recommit ourselves to a prior goal we've failed to achieve.

If there's something your users tried to do in the past but struggled with, like exercising regularly, then these special fresh start moments can help them reset the clock, to have renewed vigor and a sense of hope that they otherwise would not have, given their prior experience. New Year's resolutions are the stereotypical example, but these fresh starts can center on other events as well—moving house or changing job, for example. Many religious traditions have "fresh start" periods as well, such as Lent; websites like FaithGateway send out emails and change their web design during Lent to highlight the special time for users to recommit to and re-invigorate their spiritual path.

A Fresh Start can make the action and context feel special and allows people to put their past experiences in a separate historical category that doesn't doom them to repeating those mistakes again: *the future can be different, if you make it so.*

Use Story Editing

In "Reaction" on page 35 we talked about Tim Wilson's research on the self-narrative: the story we tell ourselves about who we are, based on our past experiences and our understanding of our future path. There, we focused on bringing together related past experiences—especially successes—to make a new action feel more familiar and natural. Wilson also discusses a related technique: story editing (helping people "edit" their self-narrative to reinterpret negative past experiences).

One of the best studies I've ever seen on behavior change was one Wilson's on story editing. He and his coauthor, Gilbert, took a group of first-year college students who were struggling—they weren't doing well in school and were worried about their future—and randomly assigned the students into one of two groups: one group received a short, 30-minute intervention; the other received nothing special.[12]

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11 Dai et al. (2014)

12 We discussed this study briefly in Chapter 1, as an introduction to the idea of *self-concepts* or *self-narratives.*

Wilson was concerned that the students saw themselves as failures. His intervention entailed giving the students information about potential *interpretations* of their bad performance in school:

> We gave them some facts and some testimonials from other students that suggested that their problems might have a different cause…namely, that it's hard to learn the ropes in college at first, but that people do better as the college years go on, when they learn to adjust and to study differently than they did in high school…[13]

The randomly selected group that reinterpreted their bad grades got better grades in the future. They got better grades *all the way to their final year in college*; they also were less likely to drop out of college. While the study did not track their full academic performance over time, we can posit that the effects were not immediate. Rather, it appears that students would have slowly changed how they saw themselves and gradually changed the amount of effort they put into their studying after this initial push.

A 30-minute intervention that changed performance for years? Impressive.

Wilson is a leading proponent of the idea of story editing more broadly; like the students in his experiment, we can reinterpret what's happened to us in the past by changing the story we tell ourselves about it—our self-narratives.[14] That reinterpretation then affects our future behavior. When we change our behavior, we also change the experiences we'll have in the future, making them marginally more likely to support our self-narratives. And with each new experience, our internal story of who we are changes a bit more, spurring a new cycle of behavior change.

For the students, it would have worked like this: Wilson helped half of them interpret their performance differently. Those who saw themselves as going through a temporary tough spot (and not as failures) would be slightly more likely to work harder and perform better on the next test. They would then look back at that (improved) performance and reinforce their understanding of themselves as students who *could* study and could overcome the challenges of first-year life. They would then work even harder on the next test, perform better, and so forth. With time, the internal stories, or self-narratives, of the two groups diverged, thanks to a small push from the initial intervention.

We interpret and reinterpret our experiences every day of our lives and thus shape our self-narratives and our future behavior. These cycles of interpretation and behavior can clearly support beneficial changes, like studying more. They can also lead to negative ones, like when someone feels like a failure and doesn't put in effort to try to

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13 Gilbert and Wilson (2011)

14 Wilson (2011)

change that. It depends on how we use our past experiences and whether we see ourselves in control of the outcomes of our lives.

Use Techniques to Support Better Decisions

If a person has a strongly negative emotional reaction to an action, based on their prior experience, or similarly obsesses about a single facet of an action's costs, it may help to treat it as a decision-making problem, rather than a problem of action. We covered this body of literature in Chapter 3 in the context of helping people make more careful conscious decisions.[15] Here are some of the key points:

- Slow thinking allows for more careful thinking.
- Add friction to slow people down by adding cognitive overhead and adding the number of steps required for action.
- Direct attention to important but ignored facets of the issue.

Make It Intentionally Unfamiliar

While I haven't seen a research study specifically test this idea in the field, another technique comes to mind that is inspired by existing work. If prior experience with a familiar (same or similar looking) product or communication causes a negative reaction that blocks action, you could intentionally change the look and feel to no longer trigger that reaction. This is appropriate only when someone faces a reaction they themselves would want not to have—i.e., in calmer moments, that they would want to take the action.

It's a technique that has clearly been used by many an unscrupulous company as well. When my wife and I were on a vacation in the Caribbean, we came across a travel service that looked wonderful. It offered great discounts on vacations in the future, at what seemed like a reasonable (but not unbelievably low) price. I checked out the company online, and everything looked OK. Only a few weeks later did we find out that the company had repeatedly changed names—whenever bad reviews and lawsuits caught up with it, it simply changed names and marketing campaigns. Same company, same (bad) service, but new skin. They kept bringing in customers by making their brand intentionally unfamiliar. You've probably come across companies on Amazon that have done the same—they change the name of their product or of their company—to avoid people's prior bad experiences with them and their negative reviews.

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15 See Soll et al. (2015) in particular.

Thankfully, we can envision more beneficial uses as well. Think of someone who has struggled with weight loss in the past and doesn't think they'll ever succeed. Intentionally creating a service that looks and feels different than a standard offering in the market (that didn't work out for them), like a meal-delivery service or a meal planner, could help them give it another try. Even though the service itself is the same, the environment around the individual may have changed, and they could be successful now—if only they could get past their prior negative experiences. Which raises the final point for this section—remember that people change.

Check In Again: You're Not Interacting with the Same Person

Not only are people's experiences different from one person to the next, but every day, your users are changing and adapting—in both universal ways (aging) and idiosyncratic ways (getting married, having children, etc.). The person you emailed six months ago is different from the person you're communicating with now. Through your user research, you can *check back in with them* and gain insight into how your user base is changing over time. If the company has had a retirement workshop in the time since the last retirement communication, build on that, especially if you can segment the communication to target those who attended.

Putting It into Practice

In this chapter, we walked through interventions you can use for the second set of behavioral obstacles in CREATE: Ability, Timing, and Experience. Let's take a look at the crib notes.

Here's what you need to do:

- Ideally, once a user has made the decision to act, they can flow from one micro-behavior to another on the path to the final action. Unfortunately, large and small Ability barriers get in their way, in which they are lacking physical resources (having a password), lacking a sense of self-confidence, or needing extra time and thought to proceed.

- To remove physical barriers, the solution is usually pretty obvious: if we're careful to watch for each micro-behavior along the path and notice them. To remove barriers of self-confidence, we look to peer comparisons, and removing uncertainty about what's ahead. To remove frictionful pauses (decision points) we use defaults and simplify interactions.

- People are naturally focused on immediate tasks and needs—so activities that benefit us in the long term are easily lost. To counter that, we reframe how we talk about the benefits, create current scarcity, or focus people's attention on action now through personal and social commitments.

- Negative prior experiences can cause them to lose sight of the broader benefits of an action, and each person's experiences are idiosyncratic. To help people move past those negative experiences, we can use the concept of fresh starts (birthdays, major life events, and such) to reset the clock, story editing to reimagine what those experiences portend for the future. We can also avoid intuitive associations and invoke deliberative System 2 thinking by *adding* friction and slowing the person down. Or, we could simply avoid those prior experiences by making the action look and feel like something unfamiliar.

How you'll know there's trouble:

- When the product is simply hard to use—behavioral techniques can help smooth minor frictions and challenges; it can't fix a broken product.
- When we're using behavioral techniques to cover for prior failings of the product: we're trying to avoid prior bad experiences people have had with our own products and convince them they should spend more money on it, etc., when it hasn't really improved.

Deliverables:

- One or more interventions to try with your users to see if it helps them take action and overcome their obstacles.

Exercise

You'll continue to use "Worksheet: Evaluating Multiple Interventions with CREATE" on page 194 for obstacles related to Ability, Timing, and Experience. In addition, the table of suggested interventions to support action is reproduced in the workbook for your ease of use.