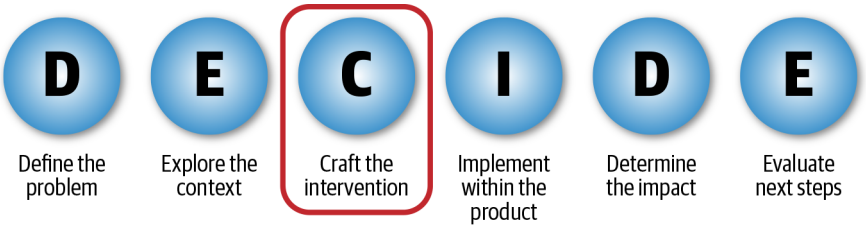
CHAPTER 9

Crafting the Intervention: Cue, Reaction, Evaluation



One of the earliest and most powerful demonstrations of behavioral science in government came from the UK's Behavioural Insights Team. They communicated with people who had tax debts and shared with them the fact that most people do in fact pay their taxes. That encouraged people who hadn't paid to do so themselves. In other words, they used descriptive norms. *The results were clear and powerful: a 5.1 percentage point increase in the payment of liabilities within 23 days.*[1]

Since then tax compliance, not surprisingly, has been a popular area for applied behavioral science among governments around the world. These efforts are often very low cost and have a long history of success.

One such effort comes from the small, underdeveloped country of Kosovo, where the World Bank's Mind, Behavior, and Development Unit (eMBeD) and the German Development Agency GIZ helped the country's tax authority design, implement and

1 For a summary of this and other international studies in tax compliance, see Hallsworth et al. (2017). For more information on the BIT's work in this area, and their many other groundbreaking projects, see and Halpern (2015).

evaluate three experimental trials to improve tax reporting and collection.[2] *In the US, many Americans grumble about our taxes and how the government doesn't need them; in places like Kosovo, low tax revenue means the government struggles to provide basic services to their citizens.*

The team tested messages meant to encourage residents to report their tax liabilities—using SMS, email, and physical mail. Within the communications, they employed:

- *A social norms approach: "7 out of 10 firms submit their declaration on time. Don't wait, be part of the MAJORITY!"*
- *An appeal to citizenship: "Not paying your taxes places an unfair burden on your fellow Kosovo citizens. Please don't be an irresponsible citizen."*
- *A focus on benefits: "Did you know that your VAT contribution is invested in your city?"*
- *And reframing non-payment as an active (intentional) choice, instead of inaction: "If you do not declare now, we will consider it to be your active choice…"*

Overall, they were able to successfully increase tax reporting; the physical letters, for example, increased reporting by 73% among all intended recipients (companies and individuals), with a tremendous 431% increase among individual tax payers who successfully received the letter.[3] *Like many behavioral studies, tax compliance studies show how low-cost, straightforward marketing and communications can deliver outsized results.*

We've arrived at the fun part: crafting the intervention itself. What should our products and communications *actually do* to facilitate or hinder action? We defined the problem in Chapter 6. We explored the context and diagnosed the behavioral problem in Chapter 7. We quickly checked whether there was a way to magically make the problem go away and do everything on the user's behalf in Chapter 8. Let's say there's no magic solution, and it's time to solve the problem directly.

Thankfully, solutions follow directly from our diagnosis of the problem. Sometimes they are easy and straightforward as well. If your diagnosis shows that your users don't know about your new feature (the Cue is lacking), well, the solution is obvious:

2 My thanks to Abby Dalton at eMBeD for suggesting this study, among the many the World Bank has implemented. This writeup is based on their report, "Promoting Tax Compliance in Kosovo with Behavioral Insights" (Hernandez et al. 2019), and subsequent email exchanges with Abby Dalton.

3 That is, on the treated population of individual taxpayers. The prior figure, 73%, was for the intent-to-treat population of both individual and corporate taxpayers. There was a significant problem of nondelivery because of bad contact information.

show them the new feature. When it's not so obvious what to do, we can draw upon the many research studies conducted in behavioral science. These studies can be grouped into ways to encourage beneficial action and ways to hinder negative actions. We'll start with encouraging beneficial ones.

As you saw in Chapter 7, we diagnose why users don't take action in terms of one or more behavioral obstacles: a missing Cue, a negative emotional Reaction, and so on. We use the CREATE Action Funnel. For each CREATE obstacle, behavioral scientists have developed a set of interventions to help overcome that obstacle.[4]

Without further ado, let's introduce the interventions.[5]

Table 9-1 offers two dozen tactics you can use to facilitate action, organized by the part of the CREATE Action Funnel that they affect most strongly. The following sections describe each of these cognitive mechanisms and how you can deploy them to the user's advantage. Many of the tactics listed here have been briefly mentioned earlier in the book, when we first introduced how the mind works. In those cases, we'll focus on how that tactic can be employed in practice. The goal of this section is to provide a quick reference to each of the major tactics you can use to craft your interventions all in one place.

Table 9-1. Tactics to support action

Component	To Do This	Try This
Cue	Create a cue	Tell the user what the action is
		Relabel something as a cue
		Use reminders
	Increase power of cue	Make it clear where to act
		Remove distractions
	Target a cue	Go where the attention is
		Align with people's time
Reaction	Elicit positive feeling	Narrate the past
		Associate with the positive
	Increase social motivation	Deploy social proof
		Use peer comparisons
	Increase trust	Display strong authority
		Be authentic and personal

4 CREATE is my framework for organizing the myriad behavioral findings out there; the original researchers did not use this framework—in the behavioral literature, there often isn't any discussion of organizing principles like this. Instead, each paper studies each behavioral mechanism on its own. Dan Lockton provides a good (and unfortunately rare) example of systematically organizing these tactics—he discusses them as eight "lenses" for thinking about behavior change (2013).

5 This presentation in table form is inspired by a conversation with Nir Eyal and ideas42's Behavioral Map.

Component	To Do This	Try This
		Make it professional and beautiful
Evaluation	Economics 101	Make sure the incentives are right
	Highlight and support existing motivations	Leverage existing motivations
		Avoid direct payments
		Test out different types of motivators
	Increase motivation	Leverage loss aversion
		Use Commitment Contracts
		Pull future motivations into the present
		Use competition
	Support conscious decision making	Make sure it's understandable
		Avoid cognitive overhead
		Avoid choice overload
Ability	Remove Friction	Remove unnecessary decision points
	Remove Friction	Default everything
		Elicit implementation intentions
	Increase sense of feasibility (self-efficacy)	Deploy (positive) peer comparisons
		Help them know they'll succeed
	Remove physical barriers	Look for physical barriers
Timing	Increase urgency	Frame text to avoid temporal myopia
	Increase urgency	Remind of prior commitment to act
		Make commitments to friends
		Make a reward scarce
Experience	Break free of the past	Use Fresh Starts
	Break free of the past	Use Story Editing
		Use slow-down techniques
	Avoid the past	Make it intentionally unfamiliar
	Keep up with changing experiences	Check back in with users

So let's look at each of them in turn. Afterward, we'll return to the other behavioral challenge: hindering negative action.

Cueing the User to Act

The sight of the overgrown grass prompts you to mow the lawn. A TV commercial for steak reminds you that you're hungry. For many behaviors, the motivation is often present, but it's in the background. Something needs to cue you to think about it *now* rather than later: that cue is the first step in the CREATE Action Funnel we talked about in Chapter 2.

Cues, wisely placed, are essential for behavior change. This is true for nonconscious habits—a cue in the environment starts a habitual routine—and for conscious decisions to act.

Ask Them

One simple way to cue people to act is just to ask them. Yes, it's obvious. Yes, it's simple. And yet, we forget to do it—because our products are so awesome and we assume people are already thinking about using them.

I know, you can't imagine that anyone would make such an obvious mistake. But we all do all the time. Do you include a link to your website at the bottom of your emails? If so, do you actually ask people to look at your site, or do you hope it's obvious? Do you post your Twitter handle on your messages or blog posts, hoping people will follow you? Readers could figure out the action we intend (view website, follow on Twitter), sure. But the more mental leaps that are required between what we see (Twitter name) and the action, the less likely is it that the action will cross our minds before we're distracted by something else.

Dustin Curtis ran a set of experiments on how he presented his Twitter handle to readers of his blog.[6] He started with a simple informative statement: "I'm on Twitter," in which "Twitter" was a link to his page. 4.7% of readers clicked. Then, he did the obvious—which apparently isn't so obvious to the rest of us—he told people what the action was. "Follow me on Twitter." Boom—7.31% of users clicked. And, even clearer: "You should follow me on Twitter here"—12.81% of users clicked. There are multiple effects at work in the last statement (a personal request, specificity, etc.), but the effect of requesting the action is undeniable. One lesson is simple: *directly, and unabashedly, ask people to take action*.

If you do it nicely and don't ask too often, asking rarely leads to less action than not asking. Asking for action within a software product has three distinct effects:

Cueing (attention)
: Not only are people busy, but their attention is extraordinarily limited. Dean Karlan (among others) shows that increasing mere attention to an issue is a key factor in driving behavior—especially if the person already has the motivation to act.[7]

6 Curtis (2009)

7 Karlan et al. (2011)

Obligation
: It's uncomfortable to say no to a reasonable request. If the company (and especially, a particular *person* who the product personifies) can be seen as a friendly, anthropomorphized presence, then this can help spur action.

Immediacy/urgency
: Most "good" actions, like saving money, exercising more, or smoking less, are things that a person can do at any time, and therefore can be put off. Asking people to do it *now* (with some reason for the urgency) helps people get over the "I'll do it later" hump.

It doesn't take much to ask users to act. Emails. Text messages. Big honkin' Act Now buttons. These are obvious and effective ways to trigger action.[8] Don't waste time on complex psychological approaches to help people to act if you haven't already tried the obvious ones.

Relabel Something as a Cue

Another way to cue action is to help users reinterpret an existing feature of their environment as a cue. Let them specify something that they see or hear normally in their lives—like the morning show on their favorite radio station. Then have them associate an action with that cue (e.g., "Once the morning show finishes, go running" or, "On Thursday, when I exit from the metro, I'll go buy my running shoes").

Simple if/then rules like this have been used for thousands of years—and your product can help people use them by building an association between something they'll see, and something they want to do. More recently, researchers have experimentally established the impact of *implementation intentions*, in which people make specific plans for action in the future.[9] Implementation intentions are a way to tell the mind to do X whenever Y happens. They pull the burden of thinking from the future to the present, allowing the person to invest time in setting up the plan to act now, and simply executing it automatically when the environment cues action in the future.

Here's a personal example of how setting up a concrete plan establishes a cue to act in the future. To write this book, I used a simple online program by Anna Tulchinskaya that encourages writers to write regularly. Figure 9-1 shows what I filled out when I first signed up. I set a plan to write every day, at a certain time of day, in a certain place. So when I saw the clock, that became my cue for action.

8 By effective, I mean they engender more action that than not using them. This technique is really obvious, but there are actually experimental studies that show that they work. See guessthetest.com for some examples of optimizing these simple calls to action.

9 Gollwitzer (1999)

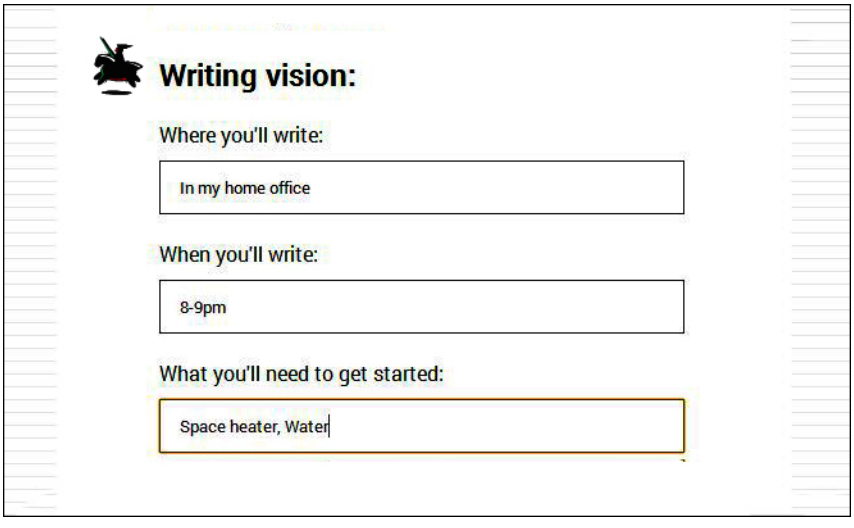


Figure 9-1. My plan to write each night

Make It Clear Where to Act

We scan, we don't read. Don't expect users to read lots of text on your page. The two-second rule is a good test—if you don't get the gist in a two-second glance at the page, you risk losing the reader's attention. Krug's *Don't Make Me Think* (New Riders, 2006) gives a great overview and practical examples, and Johnson's *Designing with the Mind in Mind* (Morgan Kaufmann, 2010) talks about the visual perception system and related psychology.

Some of the key things that we quickly recognize are the ways in which we can interact with a page (*affordances* per Norman's classic *The Design of Everyday Things*, Basic Books, 1988)—what looks like it is clickable, doable, or can otherwise get you off this page and quickly on to the next one. The lesson is simple: make buttons look like buttons, and make anywhere else people are expected to take action clearly a place where they *can* take action.

Remove Distractions: Knock Out the Competition

There's a flip side to encouraging a behavior that hasn't received nearly as much attention in the behavior change world. Namely, each distinct type of behavior is in competition with (almost) every other type[10]—competing to grab the user's very

10 We talked about this briefly in Chapter 2—that at each stage of the CREATE Action Funnel, the action must be *relatively* better than the other potential actions the person is thinking about undertaking.

limited attention (i.e., competing triggers), to claim the user's time (i.e., competing to be easier and faster), and to be the most motivating. One can draw out these competing or blocking factors with a series of questions:

- What in the environment already has the user's attention and thus *crowds out awareness of your action*?
- Similarly, is the environment crowded with other actions that are already *easy or simple* to take?
- What in the environment *demotivates* the individual or, more subtly, *motivates the individual to do other things* and thus crowds out the target action?

When faced with serious competition, here are three strategies to counteract it.

First, if the competing factors are within the application, the product team needs to make hard choices and potentially decrease the attention/motivation/ease provided for other behaviors. Often you really don't need to change all of them—just focus on pulling the users' attention to one thing at a time. If you have their attention at the time they are doing what they need to do, it doesn't matter (as much) that the application motivates them to do other things at other times. One straightforward way to minimize competing attention-getters is to simplify: remove other calls to action, remove distracting text, and take out anything else that isn't essential from the page. Put those other actions in another part of the application that is clearly, conceptually different from the current one.

Since users are scanning a screen and trying to save work, they'll all too likely just to click on the first thing that looks clickable. So make a single, clear call to action if your goal is to get the person to keep moving through the screen. Remove extra links and buttons, or place them in a distinctly lower level in the screen's hierarchy.

Second, you can use competing factors to your advantage. If the user is really engaged in something else, look for a clever way to connect it to your target action. Wherever the user's attention already is, that's the best place to be. That's why many applications are built for Facebook—that's where users are already putting their attention.

Third, there's the brute-force approach—shout louder for attention, be more motivating, and make using the product easier than breathing. I don't recommend this. If the user is doing something (else) there's (a) probably a good reason, and (b) it takes more than a slightly better behavior to overcome an entrenched one. There are real costs to switching behaviors; for example, we've already discussed the challenges of changing habits. However, if you can't directly dampen the other actions or find a clever way to use them to your advantage, this may be your only option. Over time, you can build up competing habits and experiences within the application that crowd out those other actions. Or, you can go back to the drawing board and find a different target action that doesn't compete so strongly with other existing behaviors.

Go Where the Attention Is

Where's the easiest place to get someone's attention? Where their attention already is. That's the logic behind marketing swag at conferences. Pharmaceutical salespeople are well known (and rightfully critiqued) for giving away tons of "free" pens, clipboards, stickers, and such to doctors, all with their logo on them, so that when the doctors are prescribing medicine, they'll be reminded of the particular company's products.

The same logic underlies many wearables for a far more laudable purpose. If someone wants to exercise but keeps forgetting, what do you do? You could devote a significant ad budget to signage, video testimonials from athletes, etc. Or, you could simply give them an exercise band that doubles as a watch (or, increasingly, a watch that doubles as an exercise band). They wear it on their wrist because it performs a key function and, in the process, are frequently cued to think about exercise.

If you want to get someone's attention to a recurring activity—like taking time out of their day to meditate—you could try having them install an app on their phone that triggers a reminder message, since their attention is often on their phone. Or, you could give them a calendar invite that sets up a recurring appointment—since again, their attention is often on their calendar.

Align with When People Have Spare Time

In my research, I've found that the single most powerful factor in whether someone pays attention to your cue is when you cue them; that is, whether or not you align with when they have bandwidth to pay attention.

Over the years, I've run over a hundred studies of time-of-day and day-of-week effects on different populations and regularly see changes in response by three times within the exact same population and with the exact same content. Figure 9-2 illustrates results from one set of those tests. This particular study entailed emailing employees at a large manufacturing company in the United States—we found that by far the best time to contact them was during the start of the workday on Tuesday.

Before you set all of your marketing campaigns and product launches to occur on Tuesday morning, there's an important caveat. Each group of people, and indeed each person, has a different *structure of attention*: a different rhythm to their days and weeks. People working the night shift will be able to pay attention to your cues at different times than those on the day shift. In addition to the manufacturing population in Figure 9-2, we ran a similar set of experiments with other groups—including a large minimum wage population in the service sector. Many of them worked two jobs, and weekdays were absolutely terrible times to reach them. Instead, it turned out that Sunday evenings and holidays were by far the best time to gain their attention—on the order of a two to three times improvement.

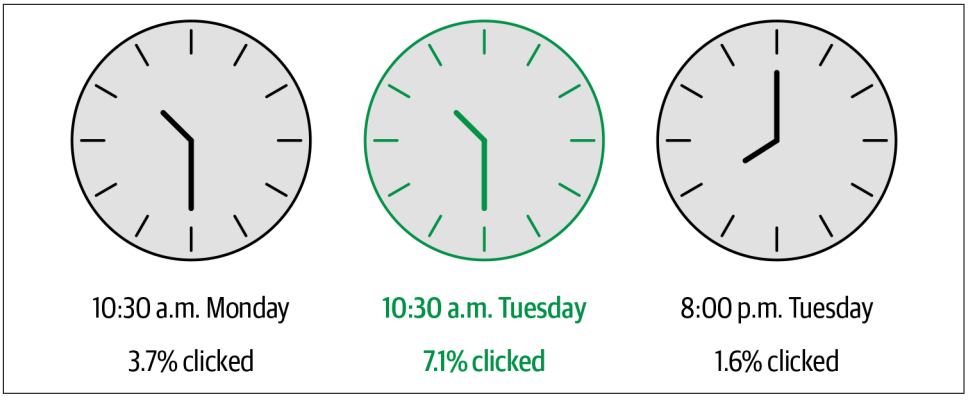


Figure 9-2. Aligning when you contact people with when they have attention to spare can have a tremendous effect on response rates

So when you try to interact with people is tremendously important. But there's no simple rule: it comes from your understanding of your population and their structure of attention.

Use Reminders

We all forget things in our daily lives—even things that are important to us. Yet we often don't consider simple forgetfulness as a cause of inaction among our users.

Researchers indeed find that people don't follow through on an action they want to take simply because they failed to remember it.[11] Reminders don't need to be fancy or complicated; an email, text message, call, in-app message, etc. can be enough. Don't assume that because the action is important people will remember. We all have busy lives—and so do your users. In some of my own research studies using email to reach diverse populations, I've generally found that two follow-up reminders lead to a roughly 50% increase in response relative to the first communication. It's not an iron-clad rule, of course, and it helps when those reminders occur at different times—in case you didn't align with people's spare time.

Bonus Tactic: Blinking Text

Blinking text is a really great cue. It never fails to catch our attention. And it's also darned annoying, because it catches our attention and won't let go. If possible, use blinking *scrolling* text. Right across the top of the screen.

OK, please don't do it. Seriously.

11 Guynn et al. (1998)

The Intuitive Reaction

Once a cue catches the user's attention, the mind reacts—often in the blink of an eye. Regardless of the overall merits of the action (and product), that reaction can cause the user to shut down. Here are some techniques to address that problem.

Narrate the Past to Support Future Action

Our self-narrative is how we label ourselves and how we describe our behavior in the past; products can help people see themselves differently. The goal, from a behavior change perspective, is to *help people see themselves as someone for whom the action is a natural, normal extension of who they are.*

In other words, if you want to help people begin exercising (like Fitbit's app does), help them see themselves as people who have already been exercising in small ways and just need to do more (e.g., first-time Fitbit users may be surprised to find out how far they normally walk each day).[12] An easy way to support this process is by merely asking people about things they've done in the past that are related. And congratulate them for the work they've already accomplished.

Essential to a supportive self-narrative is the belief that one can actually succeed in the action (i.e., users need to feel that the action is under their control and that they have the skills and resources to—potentially—make it happen). That's the sense of self-efficacy discussed in "Ability" on page 40.[13] Reminding people about their prior successes at related tasks can help build that sense of self-efficacy; so can the "small wins" and positive feedback described in the last two chapters.[14]

Bring Success Top of Mind

Similar to renarrating the past to shape someone's self-conception, a related technique is to redirect someone's current attention to prior successes. We all each have frames of reference with which we interpret and respond to the world. Those frames of reference are selectively activated, based on our (very) recent experiences.

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12 Clear (2012) expands on this concept further in his Layers of Behavior Change model. He describes three layers of progressively increasing power over behavior: appearance, performance, and identity.

13 Bandura (1977)

14 On the other extreme, generating a supportive self-narrative might require overcoming *learned helplessness* (Maier and Seligman 1976). If people have failed repeatedly and believe they had no control over the outcome, they can simply stop trying. For example, a student who has repeatedly failed at math despite hard work may shut down and think they simply aren't smart enough to handle it. Learned helplessness is difficult to overcome; products have to find creative ways to reinterpret past events and have users develop other ways of explaining future ones. Show that the person does have control over their future and that the causes of past failures don't apply to the present situation.

If you're asking someone to commit to running once a week, get the person thinking about previous times they've run first (as long as that experience was positive)! When you ask them to commit to running, the benefits of running will be clearer and more salient in their minds.

Associate with the Positive and the Familiar

Chapters 1 and 2 talked about how, for many of our choices in life, we intuitively know whether taking an action feels right or not to us. A big part of that is our prior *associations*—our learned experience that buying a fancy pair of shoes is going to make us feel great when we walk out of the store with them, at least for a few days.

Products can build these associations to help a person change behavior. In Chapter 8, we talked about changing the *action* itself so that it leverages prior experiences. Here, the *product* can be changed so that it helps users make the mental connection between the action they want to take and their prior experiences. I call this a *behavioral bridge*, because it helps the user cross from one type of behavior to another by making it less "new" and difficult. The bridge connects past experience with future actions.

Here's an example: Jive Voice is a conference-calling application that allows people to switch from using a dial-in number and long PIN code to using a simple link in a URL. Dial-in numbers and PINs are frequently misplaced and annoying to enter. When a user clicks the URL, Jive Voice calls them and patches them into the conference line. The challenge is that using a URL is new and strange. In the product, the company highlights the new and unique aspects (ease of use, etc.) but is also careful to leave a behavioral bridge in place—a comforting bit of information about how users can treat it like a normal conference call if they need to, since the underlying technology is a conference line with a dial-in number and access code.

Deploy Social Proof

If we see that other people are taking an action, we're more likely to feel that the action is valuable and worthwhile. It's a quick gut check—if that person does it, it must be OK, right? This is one of the major ways that our minds save work and quickly make decisions in uncertain situations.

Using social proof is a key tactic in sales and persuasion with a long research tradition behind it.[15] You can convey the fact that other people are taking the same action by using people's faces or short testimonials. Different genres of social proof include user or expert testimony testimonials (often on a product page), celebrity endorse-

15 Cialdini (2008)

ments (in movies or TV ads),[16] or online reviewers (think Amazon). In addition to having as long research tradition, it is used and abused extensively in marketing campaigns, from paid testimonials by fake experts to comments supporting a product by people who look like everyday users but are actually trained actors.[17] For more information on this topic, see Chapter 1.

No Magic Wands

Throughout this book, I provide the tools you need to find the behavioral processes and product features that work in your particular context, and verify their impact with your specific set of users.

What I can't do is give you the secret behavioral tricks that will always change user behavior in predictable ways. That's because such magical formulas simply don't exist (run away from people who tell you they do!). All behavior change interventions interact with an individual's desires, prior experiences, personality, and knowledge to produce their unique impact on that person. There is just too much variation across people for any approach to always work.

Most of the approaches and lessons that I talk about here have been tested either in a researcher's laboratory or in a specific product setting. In most cases, I've also observed these techniques in practice in my own work or through the dozens of companies I've interviewed and learned from. Unfortunately though, there are very few studies out there that apply and rigorously test theories of behavior change in ways that can be generalized to lots of other products. That's something we strive for on my team—but even then, it's difficult to make the case that what works for us, in helping people take control of their finances, is going to work the same way for someone else's dieting software.

We are all still in the early stages of learning how to use products to help people change their behavior. So in Chapters 12–14, I provide some guidelines on how to test specific interventions in your product, and help you move the field forward at the same time. I encourage you to contribute your findings to the broader community so we can all learn and develop our skills together.

Use Peer Comparisons

Being told about, and compared to, the actions of our peers can be immensely powerful. It's a specific form of social influence, like social proof. Our behavior frequently conforms to what we believe our peers do (i.e., *descriptive norms*), compounded by

16 And sometimes of celebrities making fools of themselves doing so.

17 A few of the many examples.

the usually false belief that our peers are watching our behavior and judging it (*spotlight effect*). This effect has been shown in everything from energy usage to voting.[18]

For behavioral products, the implications of peer comparisons are tremendous. Social norms are an incredibly powerful part of our microenvironments and can encourage (or discourage) action. The same is true within the context of each individual screen that the user interacts with.

To use this technique, compare the user's performance to a reference group that they care about (their friends, colleagues in a similar job), and try to ensure that the reference group you choose is doing *better* than the user. A note of warning, however: peer comparisons encourage people to move toward the norm (the average for the reference group). So if you tell them they are already going better than most people, they may just relax and don't work so hard. That negative effect can be counteracted with an explicit social approval (Great job!) for exceeding the norm.[19] Figure 9-3 shows one of our studies at HelloWallet that encouraged people to save.

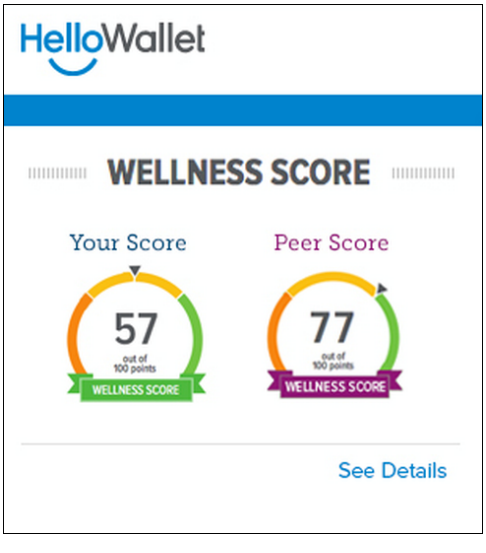

Figure 9-3. A peer comparison I helped develop to encourage people to save

Display Strong Authority on the Subject

People are more likely to trust those who they see as an authority on the subject. If you're telling your users that they have to do action X in order to build up to their

18 Energy usage: Cialdini et al. (1991); voting: Gerber and Rogers (2009)

19 Schultz et al. (2007)

goal of Y (and it's true), then speak with authority. Don't write wishy-washy text. Make sure your credentials can be seen without beating your users over the head with them.

There are great studies on how people wearing suits, or with professional titles, are simply assumed to be more credible and trustworthy. The use of (perceived) authority is also a favorite tactic in sales and persuasion. See Cialdini's discussion of the underlying research (2008).

Be Authentic and Personal

People pay more attention to personal appeals to act than to impersonal ones. If you receive a letter with a handwritten envelope, how likely are you to open it? How about one with a standard machine-printed address? The reasons are manifold, but we are more likely to ignore machine-generated, impersonal appeals than tailored, personal ones.[20] We have an almost automatic response of "this is spam" for any email or letter from impersonal sources.

Here's a great example of using personalization and authenticity to cut through the noise and get people's attention. In Oregon, there's a lottery for free healthcare for people who can't afford it. But some of the people who sign up for and end up winning the lottery don't open the letters notifying them that they've won. And so, they miss their chance at free healthcare.

ideas42, the leading behavioral economics consultancy in the United States, devised a simple outreach campaign to the winners of the Oregon healthcare lottery. They notify people that they've won with a postcard featuring the smiling faces of the people at Providence Health in Oregon that will help them sign up for their healthcare. The recipient's name and address are handwritten on the postcard. Figure 9-4 shows a sample.

20 See, for example, Garner (2005); Noar et al. (2007).

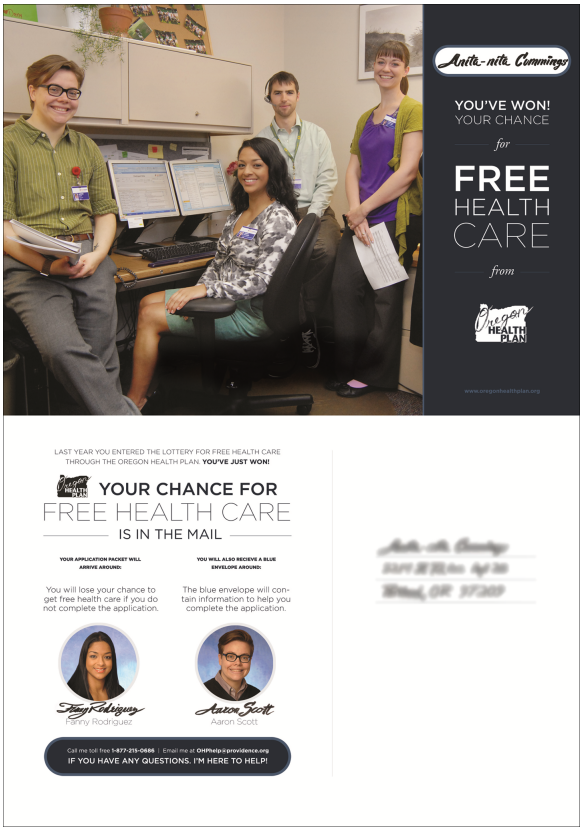

Figure 9-4. A postcard developed by ideas42 to help winners of the Oregon healthcare lottery get past their automatic rejection of form letters and read enough to see that they've won free healthcare

Remember, we've been conditioned to reject impersonal and computer-generated appeals. Most of us have an intuitive reaction against them. To avoid that intuitive reaction, our products need to do something different, something that's good practice anyway: be authentic and personal.

Make the Site Professional and Beautiful

And finally, let's not forget the basics. We rarely consider unprofessional-looking websites and apps to be credible.[21] If you're trying to help someone take an action, don't make them have an intuitive reaction of distrust. That's unnecessary friction on

21 Fogg et al. (2001)

the action. Like it or not, we assume that scammers make bad websites and apps. We even find it easier to *use* clean, well-designed products.[22] Even if your app is created to help people, it has to look good.

People really do judge a book by its cover. You could try to argue with the shallowness of people's intuitive reactions all day long. Or, you could just design a nicer cover. After they open the book—i.e., start using your app—then they can discover how beautiful it is on the inside, too.

The Conscious Evaluation

A person's conscious evaluation is similar to the stereotypical view most people have of decision making: do the benefits outweigh the costs? What are the alternatives, and how does this action stack up against them? While similar, it certainly isn't a perfect cost–benefit analysis: because people are often distracted, they may not carefully think about all of a particular action's benefits (or costs!). They may have limited information. And even when they do think carefully and have the necessary information, they may be overly focused on the present (present bias) or miscalculate costs or benefits (e.g., exponential growth bias).

Because of these imperfections, we should ask once again: what are ethical ways to design for behavior change? The core costs and benefits of an action are obviously very important; if the costs outweigh the benefit, the user shouldn't do it. Changing the core incentives to make it more valuable for the person, decreasing cost or increasing the benefits, seems appropriate and ethical. And there's no particular magic or mystery here, so we'll only touch upon that briefly.

While there are certainly gray areas, hiding the costs of an action sounds and likely is manipulative and dishonest. Highlighting existing (but unattended to or miscalculated) benefits seems generally permissible—though each case of designing for behavior change should be still reviewed, as noted in Chapter 4.

Thus, in this section, we'll focus on these three options: increasing benefits, decreasing costs, or highlighting existing benefits. In terms of the costs, we'll look at substantive changes, and not minor ones. Minor costs are surprisingly important—many of the early examples in behavioral science involved tweaking form fields, defaults, and such. Small changes can lead to outsized effects. However, these effects are not (primarily) because of the conscious calculation that people make—an extra form field shouldn't affect a conscious cost–benefit analysis at all. Rather, they cause us to pause and face a decision point (a concept we introduced in "Ability" on page 40 and will

22 See Anderson (2011) for examples.

show in more detail as we craft interventions to increase their Ability in the next chapter).[23]

That said, let's start with the most basic of all: incentives.

Make Sure the Incentives Are Right

Behavioral economics, and with it the broader field of behavioral science, in large part arose as an extension to or even a correction to traditional economics. Traditional economics focuses on a person's preferences and the optimal route to fulfill those preferences. In many economic models, this boils down to the simple observation, "People want to be paid, so pay them and they'll do stuff. Pay them more, and they'll do more." Behavioral economics shows that this isn't always the case, and people have many motivations above and beyond receiving something in return.[24] People are motivated by altruism, by a sense of self-esteem, etc. That's all true, but we should never lose sight of this simple fact: people really are motivated by getting stuff, especially by getting money.

If the behavioral obstacle that a user faces is one of Evaluation—they don't see the benefits outweighing the cost—then we should fix that first. Make sure it really is in the users' narrowly defined interest to take the action. If it isn't, (a) it's likely very difficult to overcome that basic problem of incentives, or (b) it's likely going to involve trickery.

So if you're product isn't very good and doesn't benefit your user enough to justify the cost—from their perspective, not yours—designing for behavior change isn't going to help you. Fix the product first. It must solve a user need in a way that the user feels is worth the cost. That may require lowering your price. It may mean building a better product. Either way, it's not something you can avoid. And yes, this is actually something I've had to say many times when people ask me how to promote a product that their target audience doesn't want. Yep.

OK, let's assume you've covered Economics 101. Now for the more interesting stuff.

Leverage Existing Motivations Before Adding New Ones

Does your product need to add a new motivation for users to act, highlight existing ones, or both? First, understand what currently motivates users to act. Use the information you learned about your users in Chapters 6 and 7, about why they want to

23 Thank you to Emiliano Díaz Del Valle at IMEC for raising questions about the ethical basis of designing for behavior change when the person does not feel motivated to act.

24 And, to be clear: traditional economics does not solely focus on monetary incentives nor that preferences are limited to money. It's rather that many economic arguments and models take this simple form.

take the action. Maybe their doctor has told them to exercise more; maybe they really enjoy running but can't seem to fit it into their schedule. Since we're often distracted and thinking about other things, simply reminding people of their existing motivation at the moment of action can be powerful. And *it's really cheap to remind people of what they already care about; it's much more costly to add a new motivation.*

If you're not sure what currently motivates your users, you can do some simple field tests—check how important particular motivations are versus other things in the person's life. A good way to gather that information is to present a series of trade-offs—ask which of two things the person wants more (e.g., as motivations for exercise: "living five years longer" versus "going on a date next month"). It's less ideal to simply ask people, "How important is this to you?" because we often don't have a real baseline against which to answer that question, and it engages a different part of our minds than the one that usually makes the actual decision to act.

Another reason the existing motivations are important has to do with extrinsic versus intrinsic motivation.[25] *Intrinsic motivation* comes from the inherent enjoyment of the activity itself, without considering any external pressure or reward. *Extrinsic motivation* is the desire to achieve a particular outcome, such as receiving a reward for it (like money or winning a competition).

Your users can have preexisting intrinsic *and* extrinsic motivations, and your product can leverage both to drive behavior. But when the product *adds* a new motivation to act, the source of that motivation is almost always, by definition, outside of the user and outcome-oriented, or extrinsic. For example, people using the Fitbit One often have both a preexisting intrinsic motivation and a new extrinsic motivation: an inherent enjoyment from exercising and using one's muscles, as well as the desire to reach a particular goal and be congratulated for it by the product.

Intrinsic motivations can keep people going when the product isn't directly involved in their lives. New extrinsic motivations, provided by the product, can't do that. They are effective only when the product is directly involved: when they stop, so do the users. If your product adds extrinsic motivations, it can also crowd out people's existing intrinsic motivations—meaning they lose the joy of doing something for its own sake if they start being paid to do it.[26]

25 Deci and Ryan (1985); Ryan and Deci (2000)

26 Deci et al. (1999). While there are various forms of extrinsic motivation, there is always an element of external control; we feel intrinsically motivating things are things we *want to do,* and extrinsically motivating things are things that we *need* to do, even if it is to get a reward that we want and choose. When a "want to" is turned into a "need to" by adding extrinsic motivation, it's hard to go back to feeling that it's something we want to do. The destructive sense of external control is lessened when the outcome we seek (the extrinsic motivation) is aligned with our other goals and desires. Such integrated motivations are less likely to undermine intrinsic motivations.

However, that doesn't mean new extrinsic motivations are always a bad thing; they just have to be used judiciously:

When the person doesn't have a strong existing motivation for a particular step in the sequence of actions

For example, someone really wants to get healthy, but doesn't see how regular blood pressure checks are important. A little boost can help.

For one-time actions where crowding out intrinsic motivation is irrelevant

For example, someone really wants to exercise but has no motivation to go buy gym clothes. An incentive can get them past that barrier and closer to their goal.

To help users transition from extrinsic to intrinsic motivation—to get people started as they find the joy of the activity itself

For example, conversation clubs can use a small incentive (free dinner) to get together people who are learning a new language for the first time. While they are there, they experience the intrinsic joys of being immersed in the language, which pulls them forward for future learning.[27]

Avoid Direct Payments

In line with our discussion about leveraging existing motivations before adding new ones, you could just pay people to click on your button. But I don't recommend it. If you need to pay people to do something that's supposed to be a voluntary behavior change, you're probably not connecting that small action with the reason they want to change their behavior in the first place.

There is extensive evidence that financial incentives induce individuals to undertake behaviors that they would not undertake.[28] People are motivated by money. No great surprise, right? However, when a person is already inclined to take the action, financial incentives can backfire by decreasing preexisting internal (intrinsic) motivations; the individual is more likely to stop the behavior after the incentive is removed.[29] Similarly, other social motivations are crowded out when we start thinking about our behavior in terms of being paid to act.[30] Direct payments are less likely to cause prob-

27 An activity can move from relying on an extrinsic motivation to an intrinsic one over time in stages. For example, consider a kid who plays the piano under the watchful eye of a parent. Over time, the kid can internalize the parent's wishes and hear their parent's nagging voice in their head (an *introjected motivation*; Ryan and Deci (2000), with thanks to Sebastian Deterding). Later, the kid might learn to really enjoy playing the piano—making it an intrinsic motivation.

28 Jenkins et al. (1998)

29 Gneezy et al. (2011)

30 Ariely (2009)

lems with one-off behaviors, like signing up for the gym. But they can undermine long-term intrinsic motivation, like actually going to the gym over time!

So, bringing together the various points thus far about the user's conscious Evaluation: you do want the basic incentives to be aligned. That is, it should be in people's interest to take the action. But if you find yourself adding additional payment on top of that, to make the action "more motivating," it may not have actually been in their interest in the first place (incentives were off) or you're not connecting with and leveraging the existing intrinsic motivation the person has (and risk crowding them out).

Leverage Loss Aversion

People respond much more strongly to losses than to gains—they are "averse" to losses. In fact, in many scenarios people will be willing to forfeit twice as much money to keep an item that they already have (and have no other personal attachment to) than they are willing to pay to purchase an otherwise identical item. There's a detailed literature on special cases of loss aversion, but that general rule holds true in many cases: *losses are roughly twice as motivating as gains*.[31]

Loss aversion is a very powerful tool to help people change their behavior. By selectively framing the presentation of a desired action as *avoiding loss rather than gaining benefits*, the application can trigger a strong gut reaction to act. For example, it can be much more persuasive to tell someone they'll lose sexual potency unless they get in shape, rather than telling them they'll gain more attractive abs.[32]

When leveraging loss aversion, though, remember that your users can just stop using your product to avoid loss and the negative emotions that come with it. The product must be seen as worthwhile and enjoyable overall—loss aversion should be used only on the margins.

Use Commitment Contracts and Commitment Devices

Loss aversion, when used too often or people actually have to experience the loss (instead of merely the prospect of it), has an obvious downside: you can end up *punishing your users*. If you give people a consistently bad experience, in most cases, they will stop using your product and do something else with their time. If you could hypothetically force people to endure your punishment, that might be effective. But you can't, and the user has the option to ignore or avoid you.

31 Kahneman and Tversky (1984)

32 Kolotkin et al. (2006)

Not punishing your users doesn't mean completely avoiding the *threat* of properly selected punishments. One powerful type of threat is a *commitment contract*, in which people pre-commit to taking an action, and they forfeit something they care about if they fail to follow through.[33] For example, stickK.com employs commitment contracts to generate creative, personal punishments, like automatically donating money to an NGO you hate if you fail to lose weight. Importantly, their punishments are self-imposed and self-calibrated; people choose their own punishment. We react much more negatively to externally imposed punishments than we do to self-imposed ones.

Overall, the trick is to carefully use the threat of punishment (and ideally, a self-imposed one) to motivate action without actually punishing people and driving them away.

Another, related technique is to use a *commitment device*, in which people lock in their choice to not act in a certain way in the future. It is like a commitment contract, but it's more extreme: the future action is closed off, instead of threatening a punishment. Taking disulfiram before a night of potential drinking is one such device; it makes the person who doesn't want to drink feel sick if they cross the line and do.[34]

Test Different Types of Motivators

As humans, we don't lack for things that could motivate us. Money. Food. Control. Esteem. Researchers have tried to make sense of our motivations for decades,[35] from Maslow's hierarchy of needs (we address deficiencies in a successive set of needs, from basic comfort to self-actualization) to von Neumann and Morgenstern's expected utility theory (we should do what provides us the most benefit). I won't try to argue which motivations are most important for all of humanity but rather will make an observation. The most important form of motivation is the one *that's actually compelling for your users, given their life circumstances*. Identifying that motivation is part of getting to know your users and what resonates with them.[36] It

33 They leverage loss aversion, the cognitive quirk in which we work much harder to retain the things we own (or otherwise feel to already belong to us) rather than to earn something of equivalent value.

34 See Rogers et al. (2014) for a summary of commitment devices in health, for example.

35 Millennia, really. For example, Plato saw desires coming from three parts of the soul (Blackson 2020).

36 Understanding your users' landscape of motivations also allows for clever techniques like temptation bundling (Milkman et al. 2013)—in which you make something people really like, such as reading *The Hunger Games*, conditional on something people like but aren't as keenly motivated by, such as exercising at the gym. That doesn't mean you can hold the things that people love hostage to something they hate. Instead, the researchers focused on intentional, voluntary bundling—allowing people the option to get the book and exercise at the same time.

may also entail experimentation—trying out a cash payment or public acclaim or providing a sense of mastery. Three big areas you can explore with your product are:

- Quasi-monetary rewards like points redeemable for cash (while being wary of crowding out other motivations and of needing cash because the product is fundamentally misaligned with user needs)
- Progress and achievement rewards (including badges and other gamification techniques)
- Social motivations, like status or esteem of peers
- Intrinsic benefits like exploring something new (the product can accent the intrinsic rewards that users already receive)

Also, try varying the motivation over time—we become satiated in any single area, at least in the short term and start looking for new rewards. That's obvious with food (if you're no longer hungry, more food just isn't that motivating), but it also applies to other forms of reward (if you've won a competition against your friends 10 times in a row, winning again isn't that interesting).

Use Competition

To call out one of the existing social motivations people have: competition, judicially used, can be quite powerful. We all have a natural competitive side—though it's much stronger in some people than others. Usually, you'd build a competition into the overall product, but it can be deployed at a page level too. For example, imagine a page that has people match Spanish words to their English meanings to help the users learn Spanish. The page could include a counter of how many correct answers the individual has versus others on the page at the same time.

Pull Future Motivations into the Present

We like stuff now, rather than later. We're far more motivated by current goods and experiences than in future ones, even after accounting for inflation, uncertainty, and so on. This *temporal myopia* (focusing on the present even to our own detriment), aka *present bias*, is deeply ingrained and something that too many behavioral change programs forget.

For most people, most of the time, "a few years from now" doesn't exist. It's not real, and whatever happens *then* isn't motivating *now*.

And that presents a serious problem. Let's say we sincerely want to slim down our weight to avoid heart disease, or we may really think that saving for retirement is important. But if the threat of heart disease or the need for retirement money is still

many years off, it just isn't real to us.[37] Daniel Goldstein refers to this as the struggle between the present and future self.[38] We have noble long-term goals but are tempted to do other things in the present.

How can we make that future motivation affect our near-term behavior? We can use moments of strength (when we are actually thinking about the future) to lock in that motivation. Commitment devices—described in an earlier section—are one option. An extreme version of them, called the Ulysses contract, was described in Homer's *Odyssey*: Ulysses had the crew members on his ship tie him to the mast so that he was physically unable to respond to the alluring call of the mythical (and deadly) sirens. In a Ulysses contract, people make binding commitments that restrict what they can do in the future.

Another method is to try to bring the future into our current awareness. For example, researchers have used photo imaging techniques to help people visualize what they will look like in the future and act according to their future self's motivations.[39]

Dan Ariely tells a personal story about how he turned a long-term motivation into something meaningful and useful in the present with "reward substitution."[40] He needed to take a highly unpleasant, painful medication for over a year that had a long-term benefit (beating a disease). But that long-term benefit wasn't enough to overcome the temptation to stop taking the medication. So, he linked taking the medication to something that he enjoyed in the near-term—in this case, watching movies. He'd only watch movies right before taking the medication, effectively substituting one motivation (beating the disease) for another one (enjoying the movie).

If these don't work, we can forget about the long-term motivation altogether and simply look for a completely different motivator that isn't far off in the future. For example, instead of talking about the long-term health benefits of getting in shape, highlight the immediate benefits it will have on someone's love life.

Each of these is a technique to make the action motivating now, when it otherwise would be far in the future. Just remember: when we ask people to just think about what a wonderful retirement they'll have in 20 years or all the things they'll be able to do after they lose three hundred pounds, we're asking them to do something that's deeply foreign to how our brains are wired.[41]

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37 In economic terms, we "discount," or place less value on, things that are in the future. The further in the future they are, the less we value them.

38 Goldstein (2011)

39 Hershfield et al. (2011)

40 Ariely (2009)

41 See, for example, Laibson (1997), Kirby (1997).

A Few Notes on Decision Making

In this chapter, and indeed in most of the book, we focus on facilitating (or hindering) action. As we briefly talked about in Chapters 1 and 3, there's another body of work in behavioral science around how to make better decisions: how to help people slow down and make the choice they'd make if they really thought it through. Here are some techniques that can help there, which are similar to the Evaluation stage of the CREATE funnel.

Avoid Cognitive Overhead

One way to think about the mental cost of your target action is *cognitive overhead*, or "how many logical connections or jumps your brain has to make in order to understand or contextualize the thing you're looking at."[42] Figuring out what to do shouldn't be guesswork for the user. That may mean making the action slightly more *difficult* to undertake in order for it to be easy to understand.[43]

David Lieb gives a great example of product that is physically easy to use but still is costly to the user because of cognitive overhead.[44] Here's his hypothetical user thinking through a QR code, "So it's a barcode? No? It's a website? OK. But I open websites with my web browser, not my camera. So I take a picture of it? No, I take a picture of it with an app? Which app?"[45] Forcing your users to think about what to do should be reserved for cases where their input is important and will shape their outcomes; don't force your users to expend energy because the product is confusing.

Make it straightforward and clear what the user needs to do each time the user has to make a logical leap from, "Oh, if I do this, then this will probably happen, but I'm not sure," that's costly. It takes time and energy away from the task at hand.

Make Sure Instructions Are Understandable

This one is relatively straightforward. Look at the behavioral map and specifically micro-behaviors where the user is told what to do next. Write down how those parts would be described to a prospective user in at most two sentences. Thinking about the behavioral personas identified in Chapter 7, would those users understand the description? As needed, run it by some sample users.

42 Demaree (2011)

43 Lieb (2013)

44 Ibid.

45 Ibid.

Avoid Choice Overload

A growing body of work demonstrates the difficulties individuals face when confronted with too many choices. Despite the common wisdom that "more choices are better," two problems arise. First, people may refuse to make any decision at all. Second, people may regret the choices they made in an impossible search for the optimal choice.[46]

For example, an often-cited study by Iyengar and Lepper placed two different displays of jam in a grocery store: one with 24 jams, and one with 6.[47] The 24-jam display attracted 60% of customers, but only 3% of those shoppers ended up buying any of them. The 6-jam display attracted 40% of customers, but 30% of them bought one. Subsequent studies have also shown that satisfaction with one's choice, *whatever it is*, decreases with the number of options one had to choose among.

There is an obvious implication here when constructing individual pages in an app—avoid situations in which the user has to choose among a large number of options (if you want the user to make a choice and be happy with it). There is also a less obvious lesson: be wary of users (and fellow employees) who say they would really like more options. The person is probably telling the truth, at least from the perspective of their conscious deliberative self, but that doesn't mean providing more options is the right thing to do.

Slow Them Down

Avoiding overhead, ensuring clarity, and avoiding choice overload all seek to decrease the effort that the conscious mind needs to exert—to help people focus on what matters in a decision and not put it off because of its complexity. What if people aren't making a conscious evaluation at all? Here, we look to the techniques in the broader judgment and decision-making literature, in particular, intentionally adding friction to the process so that it is difficult to act on an intuitive reaction. You can try to require a waiting period before making a decision, make the problem intentionally more onerous, or even make the text more difficult to read. Check back in "Rushed Choices and Regrettable Action" on page 62 for more information on this topic.

Putting It into Practice

There are a great variety of approaches to choose from when crafting interventions to support action. In this chapter, we reviewed those for the first three behavioral obstacles in CREATE: Cue, Reaction, and Evaluation. Let's take a look at the crib notes.

46 See Iyengar (2010); Schwartz (2004)

47 Iyengar and Lepper (2000)

Here's what you need to do:

- Behavioral solutions often follow directly from a clear diagnosis of the problem. If you don't have your users' attention to a new feature, well, get their attention. If they dislike how your product looks, change it. Spending enough time on the diagnosis can make crafting the intervention really straightforward.
- When the solution isn't obvious, however, we have many techniques to draw upon. These include removing competition for the user's attention, social proof, loss aversion, and commitment contracts.

How you'll know there's trouble:

- When you're not clear which obstacle users face (go back to Chapter 7 to diagnose it).
- When increasing the users' motivation seems like the obvious and only solution (go back to Chapter 8).

Deliverables:

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