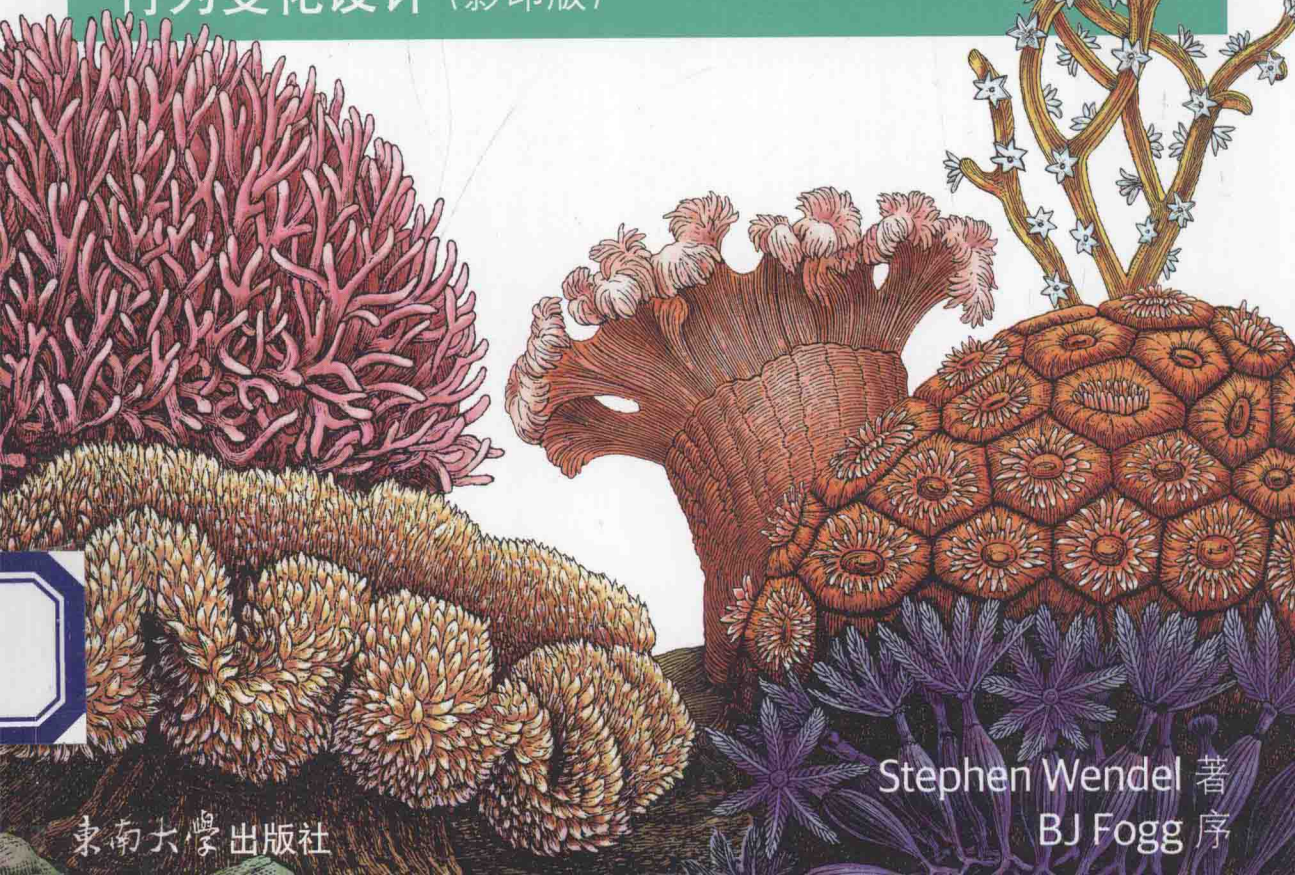# Designing
for Behavior
Change

行为变化设计（影印版）

Stephen Wendel 著

BJ Fogg 序

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Designing for Behavior Change

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[*Foreword*]

On the first day of class at Stanford, I never know which of my students will change the world.

When student Mike Krieger turned in his first few projects, I saw his potential. He masterfully applied concepts learned in class to his designs. A few years later Mike drew from a class project called "Send the Sunshine" to create a global phenomenon called Instagram.

The success of Instagram wasn't an accident. Mike had the skills to follow a winning formula: He tapped existing motivation, and he kept things simple. This is the same formula that students in my Facebook course used to engage over 24 million people with their class projects.

Many thousands of people can write code. But only a relative few can get the psychology right. And when it comes to behavior change, the right psychology makes all the difference.

If you're confused about how human behavior works, I say there's a reason. The problem is not you. The problem comes from traditional theories and models about human psychology. We've inherited some approaches that rarely help design for behavior change in the real world.

Even our language about behavior can mislead. For example, you don't "break" a habit. That's the wrong verb. It implies you exert sudden force and the habit goes away. A better verb would be "untangle" because it sets the right expectations of how to get rid of such behaviors. It requires persistence.

Because I saw how often traditional approaches led to failure, at one point I decided to ignore what I'd learned about psychology. I decided to start fresh. With nothing to muddy my view, I explored basic questions: What are the components of human behavior? What are the different types of change? How do you design behavior solutions that really work?

Over time I mapped out 15 ways behaviors can change (the Behavior Grid). I discovered that behavior occurs only when three elements converge at the same moment: motivation, ability, and a trigger (the Behavior Model). And I created a new way to form habits (now called Tiny Habits). My conclusion: Behavior is systematic. And all the pieces fit together.

I began sharing my new insights and methods at Stanford. And I started guiding innovators who enrolled in my Boot Camps. That's how I met Steve Wendel, the author of this book. He joined me for two days of learning about behavior design.

A common reaction after learning my stuff: *Wow, why didn't I see that before? It all makes sense.* With the right insights and methods, innovators can reliably design products that change behavior. It's not as complicated as many believe.

In my personal life and my professional work, I'm fascinated with this challenge: Design the simplest solution that has the biggest impact. I call this the "Feather Principle." Why? Because a feather seems simple, yet it can do so much: insulate, propel, tickle, adorn, and amuse.

You can see a combination of simplicity and power in art and music. Those are the creations I admire most. In our digital world, Twitter and Instagram are paragons of the Feather Principle. You can also find feathers in architecture, food, fashion, and more.

When well designed, a simple thing can have a big impact.

During my Boot Camp, I teach people to explain the Behavior Model (B=MAT) in less than two minutes. You learn to stand up at a white board and map out how human behavior works. I get you ready to teach clients and colleagues. Simple and powerful, this feather changes the game because it changes how people think.

As I talk with innovators in my 15-minute phone chats, I focus them on the essential elements of designing for change. This is a feather I call the Fogg Method. It has three steps:

1. Select the right target behavior.

2. Make the target behavior easy to do.

3. Ensure a trigger will prompt the behavior.

In many cases, people who phone me are stuck in abstractions. I help them understand these three steps and get started on the right path.

When I first shared Tiny Habits in 2011, I didn't expect that years later I'd still be coaching people, day by day, to create new habits in their lives. The method works, and people like to share it with friends. So I keep teaching it.

Not only is Tiny Habits a feather, it also follows my three steps. First, people pick a specific new behavior they want in their life, such as flossing. In Step 2, they make the behavior easier in two ways: They scale back the behavior itself (floss one tooth), and they redesign their environment to make the behavior easier (setting floss on the counter). The third step is to find a trigger for the new behavior. In Tiny Habits, the breakthrough is to have your existing routine (brushing your teeth) prompt you to do the new behavior (flossing).

When you put the right pieces together, the habit forms quickly. Some people say it feels like magic. But of course it's not magic: It's good design.

Knowing how to design for behavior change gives you power. The methods I teach, the content in this book, and the insights you find elsewhere—all this boosts your ability to change people's lives. That's a big deal. I strongly believe the best approach is to *help people do what they already want to do*. In other words, as a behavior designer, you are not manipulating people or transforming them into someone else. You are helping people become a better version of themselves.

The author of this book is the type of person I like to join my Boot Camp. He's smart and motivated. He asks good questions. He knows how to synthesize and how to extrapolate. And just as important, he wants to use his skills to make people's lives better. I'm proud of Steve's work in this book, and he should be proud too. You'll soon see why...

But before you turn the page, I have a challenge for you. It's the same one I give to students on the last day of my Stanford classes. My challenge is that you'll use what you learn about behavior design to do three things: to make individuals happier, to make households stronger, and to make communities more vibrant.

To achieve these worthy goals, the author and I have invested some of the best days of our lives. We are using our skills to benefit other people and to change the world in good ways. I invite you to join us.

—*BJ Fogg, PhD*
Healdsburg, California
October 2013

- The Nike+ FuelBand, a wristband that automatically tracks your movement and helps you exercise more (one of a dozen new, wearable computing devices on the market)

- Nest, a thermostat that learns your home heating schedule, reinforces good energy usage with a simple phone app, and automates saving money on electricity bills

- GlowCap, a cap for prescription bottles that flashes when it's time to take medication and automatically reorders the medication online when you need it

- Clocky, an alarm clock that jumps off your nightstand and rolls around the room, so you can't turn it off without getting out of bed (Figure Preface-1)

- Barack Obama's highly successful online volunteer platform that enabled volunteers to call potential voters from home, whenever they had a few minutes to spare (Figure Preface-2)

- Lift, the habit-building application; 401(k) auto-escalation programs for saving for retirement; and the QuitNow! mobile app to stop smoking with peer support[1]

FIGURE PREFACE-1.
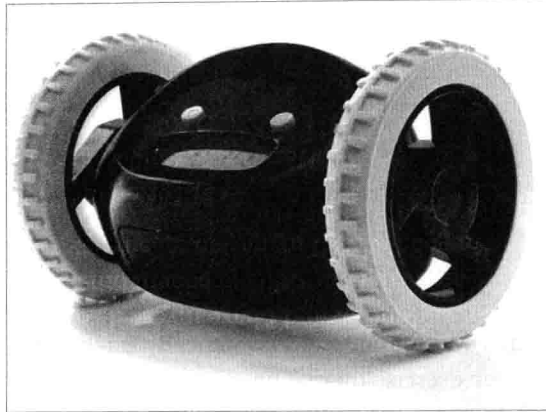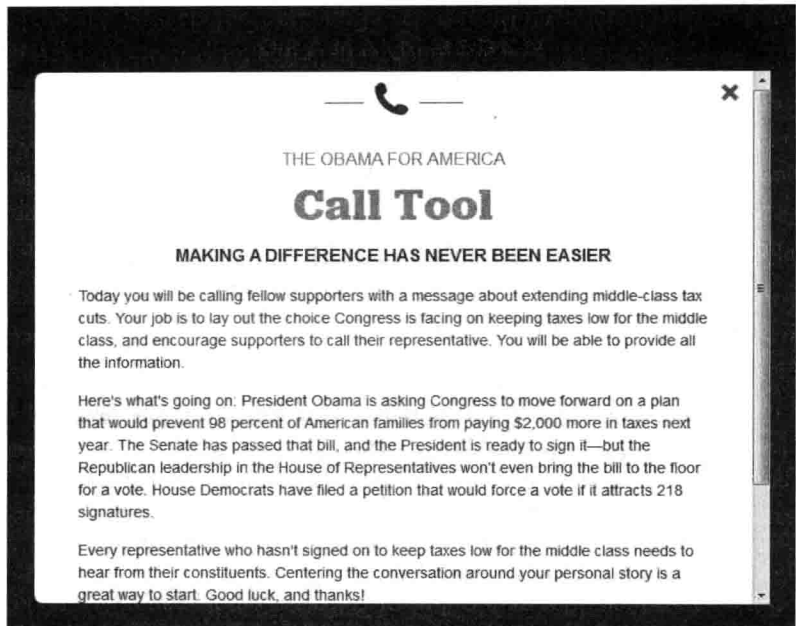Clocky, the clock that runs away from you

FIGURE PREFACE-2.
Obama's volunteer mobilization site, *call.barackobama. com*, during the 2012 campaign

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THE OBAMA FOR AMERICA

Call Tool

MAKING A DIFFERENCE HAS NEVER BEEN EASIER

Today you will be calling fellow supporters with a message about extending middle-class tax cuts. Your job is to lay out the choice Congress is facing on keeping taxes low for the middle class, and encourage supporters to call their representative. You will be able to provide all the information.

Here's what's going on: President Obama is asking Congress to move forward on a plan that would prevent 98 percent of American families from paying $2,000 more in taxes next year. The Senate has passed that bill, and the President is ready to sign it—but the Republican leadership in the House of Representatives won't even bring the bill to the floor for a vote. House Democrats have filed a petition that would force a vote if it attracts 218 signatures.

Every representative who hasn't signed on to keep taxes low for the middle class needs to hear from their constituents. Centering the conversation around your personal story is a great way to start. Good luck, and thanks!

Each of these products was designed to help individuals take action in their lives. Companies have developed a slew of new and innovative products in this space over the past few years—inspired by behavioral economists like Richard Thaler and psychologists like Daniel Kahneman and BJ Fogg.

This book is about how to design, implement, and test such products. Traditional product design is about building *good* products—products that work well and people like using. Designing for behavior change is about building products that are both *good* and *behaviorally effective*—products that help people change their behavior. The goal is to help people do things that they want to do but have struggled with in the past.

The method I discuss here comes, in large part, from our daily experiences at HelloWallet, where I serve as the head researcher. Over the past few years, we've successfully built (and experimentally tested) products that help people take control of their finances—after much trial and error and learning along the way. This method also builds upon the experiences of countless other companies and researchers that we've been talking to and sharing notes with about behavior change. So, let's get started.

What Does It Mean to Design for Behavior Change?

Within the last decade, there has been a tremendous flowering of research in behavioral economics, psychology, and persuasive technology. This research helps us understand how people make decisions in their daily lives, and how those decisions are shaped by people's prior experiences and their environment. Throughout this book, you'll see how to methodically and rigorously apply the lessons from psychology and behavioral economics to the practical problems of product design and development.

Applying that literature is the *first* part of designing for behavior change. The overall process entails four phases, which inform and enhance how we build products (Figure Preface-3):

1. *Understand* how the mind decides to act and what that means for behavior change.

2. *Discover* the right behaviors to change, given your goals and your users' goals.

3. *Design* the product itself around that behavior.

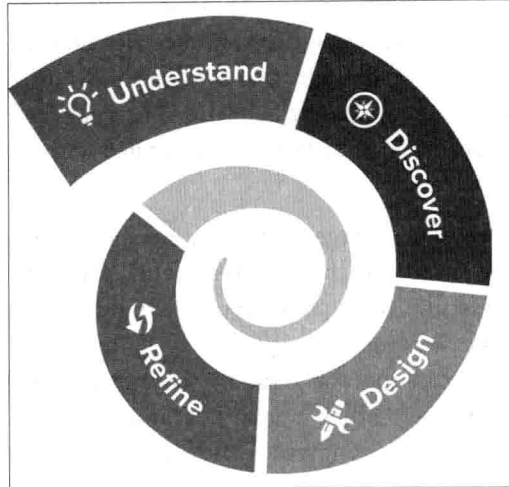4. *Refine* the product's impact based on careful measurement and analysis.

FIGURE PREFACE-3.
Designing for behavior change is four stages: start with a core understanding of the mind, discover the right behavior, design the initial product, and then iteratively refine it

In fact, that's the basic outline of the book—we'll cover each of these topics in detail, along with additional information and techniques that will help you along the way.

The "Design" Part of Designing for Behavior Change

Of these four phases, designing the product itself is the sexiest part, so I devote the single largest chunk of the book to that. Our natural inclination is to jump straight to the product and say, "What should the product do to drive behavior change?" But that's actually not the best place to start. Instead, we'll start with the action or behavior that we're trying to change. We'll ask how we can reimagine the action, based on what we learned in the first two phases, to make it more feasible and more palatable for the user *even before we build anything*.

From there, we'll talk about how to construct the decision-making environment—both the product itself and the surrounding context that the person is in—to support action. And, we'll talk about how to prepare users to take action with the product.

Here's a quick outline of the design process:

1. *Action.* Structure the target action to make it feasible and inviting.

2. *Environment.* Construct the decision-making environment to support the target action.

3. *User.* Prepare users to take the target action.

We'll use this three-step design process for both the *conceptual design* (figuring out what the product should do) and the *interface design* (figuring out how the product should look).

Designing for Behavior Change in an Agile or Lean World

Designing for behavior change doesn't require a specific product development methodology—it is intended to layer on top of your existing approach, whether it is agile, lean, Stage-Gate, or anything else. But to make things concrete, Figure Preface-4 shows how the four stages of designing for behavior change can be applied to a simple iterative development process. At HelloWallet, we use a combination of lean and agile methods, and this sample process is based on what we've found to work.

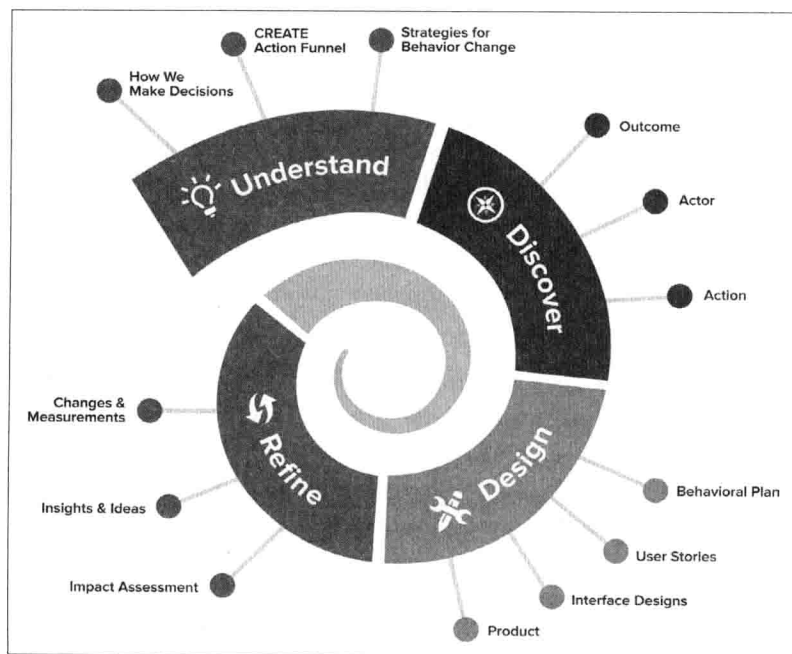Figure Preface-4 shows you the specific outputs that the team will generate within each stage of the process.

FIGURE PREFACE-4. The outputs generated by designing for behavior change at each stage of the process, using a simple iterative product development cycle

Let's assume that a company (or NGO, government body, or individual entrepreneur; I use "company" as a convenient shorthand for any individual and organization making behavior change products) is developing a new product. Here is how this sample process works, and the outputs the team will generate at each stage:

1. *Understand.* To start things off, the company gains an understanding of how we make decisions and how our cognitive mechanisms can support (or hinder) behavior change. The two main topics to cover are the prerequisites for action, which are summarized in the *Create Action Funnel,* and the three *strategies for behavior change* that companies can use.

2. *Discover.* With that knowledge in hand, it clarifies what, specifically, the company wants to accomplish with the product, and for whom. Perhaps the company seeks a world full of (newly) healthy people. The company then identifies the particular group it wants to make healthier (let's say it's office workers), and the action it wants to encourage (let's say it's walking more); that's the *actor* and *action.*

3. *Design.* It's convenient to think of the design stage in terms of two subtasks—designing the overall concept for the product, and then designing the specific user interface and actually building the product.

   a. *Conceptual design.* The company develops a *behavioral plan,* a story about how the user will interact with the product. That's the high-level conceptual design of the product. The behavioral plan is incrementally built up by examining the *action* itself, the *environment,* and the *user's preparation* to act. Then, the company extracts *user stories*: short statements that capture the spirit of each piece of the behavioral plan. The product team will flesh out the user stories in greater detail.

   b. *Interface design.* The team then develops *interface designs,* which are reviewed and revised for their behavioral content (action, environment, and user preparation). Next, it's time to actually build *the product.* Some engineering compromises and trade-offs naturally occur, and the team reviews them as well for their behavioral impact.

4. *Refine.* Once a version of the product is ready for field testing, the team starts to gather quantitative and qualitative data about user behavior to form an initial *impact assessment* of how the product is doing. A careful, structured analysis of that data leads to *insight and ideas* for improving the product. That could lead the team members to revise their underlying conception of whom they are helping and how, and generate a new behavioral plan and new user stories accordingly. The new user stories turn into designs, the designs into product revisions, and so on. The spiral continues inward until the desired level of impact is achieved. With each revision, the team makes *changes and measurements* of how those changes impacted user behavior.

If the company already has an existing product and wants to refine it, the process is similar but starts at a different place. After establishing the desired outcome, actor, and action, the company jumps directly to refinement: measuring user behavior and the product's current impact, and comparing it against the company's behavioral goals for the product. Then the team uses that information to drive insights that inform the product's target actor and actions, behavioral plan, and user stories.

As I mentioned, this particular process follows a simple iterative approach. Of course, you're not required to follow it (well, you might hurt my feelings). In this book, I also discuss how to employ these methods using a sequential development (aka "waterfall") process. The key is that you can slot in the tools of designing for behavior change where you need them.

Behavioral Plan? User Stories?

Throughout the book, you'll find terms to express new ideas—like the behavioral plan. They are defined in the text, and in a quick-reference glossary (Appendix A). There is also a smattering of special terms from particular product development processes—like user stories—with suggestions on where to learn more about them. For example:

Behavioral plan

A detailed "story" of how the user progresses from being a neophyte to accomplishing the action while using the product. The "story" can be narrative, visual, verbal, whatever—as long as it gets the job done. See Chapter 6 for how to develop it.

User story

A term used in product development (especially agile development) for a plain-English statement about what the user needs. It captures the "who," "what," and "why" of a product requirement. For example: "As a user, I want to <take an action>, in order to <reason for action>." See *http://en.wikipedia.org/wiki/User_story* for more information.

Who This Book Is For

As you can probably tell by now, this book is aimed at practitioners—the people who design and build products with specific behavioral goals. Teams that design for behavior change should generally include the following roles, and individuals in each of these roles will find practical, how-to instructions in this book:

- Interaction designers, information architects, user researchers, human factors experts, human-computer interaction (HCI) practitioners, and other user experience (UX) folks

- Product managers, product owners, and project managers

- Behavioral social scientists (behavioral economists, psychologists, judgment and decision-making experts) interested in products that apply the research literature

The person doing the work of designing for behavior change could be any one of these people. At HelloWallet, we have a dedicated person with a social science background on the product team (that's me). But this work can be, and often is, done wonderfully by UX folks. They are

closest to the look and feel of the product, and have its success directly in their hands. Product owners and managers are also well positioned to seamlessly integrate the skills of designing for behavior change to make their products effective. Finally, there's a new movement of behavioral social scientists into applied product development and consulting at organizations like ideas42 and IrrationalLabs. So, the people designing for behavior change probably wear other hats as well.

In addition, this book is for entrepreneurs and managers. If you've ever read *Nudge, Blink,* or *Predictably Irrational,*[2] and wondered how you could apply them to your own product and users, read on. While the book is about helping users take action in their lives, that doesn't mean that designing for behavior change is incompatible with a for-profit business model. Businesses make a profit; that's how they exist. So you'll find suggestions in Chapter 15 for building a successful business model on voluntary behavior change. If in addition to making a profit, you are helping your users take action and change their behavior, this book can help you do it.

Nonprofit entities and some government agencies often explicitly focus on helping users change their behavior; *Designing for Behavior Change* can help. For example, the United Kingdom government's Behavioural Insights Team is widely applying behavioral research to UK public policy and the provision of services.[3] Where relevant, I'll note parts that are particularly important for nongovernmental organizations (NGOs) and government agencies. Because it's more compact to write, I'll refer primarily to "companies" here. In almost all cases, I really mean companies, organizations, and relevant government agencies.

Finally, my expertise is software development, so I'll use the terminology that I use in my day-to-day life—applications, software, and programs. You don't need to be in software development to find this relevant to you. In fact, some of the most innovative work in persuasive design, one of the fields that this book draws inspiration from, is in the design of everyday objects.[4] As you apply *Designing for Behavior Change* to your work, whether in software or beyond, I'd love to talk with you and share notes!

Combining Research, Data, and Product Expertise

One of the book's recurring themes is that understanding how the mind works is not enough to build behaviorally effective products.

In addition to behavioral science research, we need two sets of skills to support the process. First, we need to plan for data analysis (both qualitative and quantitative) and for refinement and iteration based on that data. That means adding metrics to the application and conducting user research to understand individual behavior, analyzing the data, and making improvements over time based on it. Why do we need to plan for iteration? The research literature is invaluable, but we're just starting to understand how to best apply it to practical product development. There are no magic formulas for behavior change: we're all unique people, with different histories and personalities. This book will help you take your first, best shot, then fine-tune your product based on what the data tells you about your real-life users and their behavior.

Second, we need to build products that people actually enjoy using. I know it sounds obvious, but it's something that's often forgotten as we build products designed to educate, motivate, or otherwise help our users. We tend to focus on the behavior change (and how important it is, etc.), and forget the fact that people still have to *choose* to use our products. Users avoid boring, frustrating, ugly applications, so we should remember the lessons of good product design: from identifying user needs and frustrations to designing an intuitive, beautiful user interface.

When you bring these raw ingredients together—behavioral research, product design expertise, and data analysis—you have what's needed to design for behavior change (Figure Preface-5).
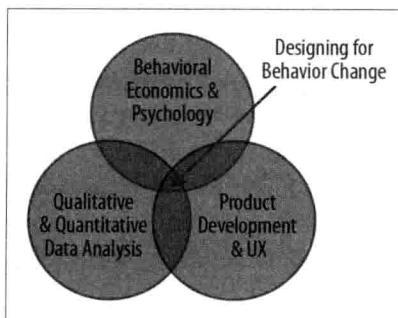

FIGURE PREFACE-5.

Designing for behavior change integrates behavioral research, pragmatic product development, and rigorous data analysis

What Do You Need to Know to Benefit from This Book?

This book gives you enough knowledge in each of these three areas to get oriented and to start working on concrete products. It covers most of the behavioral research you'll need to finish the products as well, but at some point along the way, you'll need people who are experts in qualitative or quantitative data and in product design.

If you *are* an expert in one of these areas, all the better. The book will show you how designing for behavior change builds upon and complements your existing expertise. You'll find out how to leverage your existing skills to play a leading role in the development of behaviorally effective products within your organization.

What Types of Behaviors Can This Help With?

The techniques I'll talk about here assume that the product will support an action that people aspire to but have had difficulty taking. Learning a language. Sticking to a diet. Meeting new people. This may seem like it applies only to a narrow set of products, but I've found that there are two big groups of behaviors that fit this criteria. Both groups of behaviors (and products that work with them) can use this method:

- Behaviors that users want to change *within their daily lives*
- Behaviors *within the product itself* that are part of using the product

The first group, behavior change within people's daily lives, includes:

- Controlling diabetes
- Paying off credit card debts
- Getting back in shape
- Getting involved in their communities

Often these behaviors relate to big-picture social issues, like health and wellness. When we design products that support these behaviors, we help the individual and impact our society at the same time. Opower and Nest, for example, are companies that help individuals decrease individual energy usage: saving people money and helping the environment at the same time. Other products that change behavior in this way are Fitbit (exercise) and Weight Watchers (diet).