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How to Build Better Habits in 4 Simple Steps

IN 1898, A psychologist named Edward Thorndike conducted an experiment that would lay the foundation for our understanding of how habits form and the rules that guide our behavior. Thorndike was interested in studying the behavior of animals, and he started by working with cats.

He would place each cat inside a device known as a puzzle box. The box was designed so that the cat could escape through a door "by some simple act, such as pulling at a loop of cord, pressing a lever, or stepping on a platform." For example, one box contained a lever that, when pressed, would open a door on the side of the box. Once the door had been opened, the cat could dart out and run over to a bowl of food.

Most cats wanted to escape as soon as they were placed inside the box. They would poke their nose into the corners, stick their paws through openings, and claw at loose objects. After a few minutes of exploration, the cats would happen to press the magical lever, the door would open, and they would escape.

Thorndike tracked the behavior of each cat across many trials. In the beginning, the animals moved around the box at random. But as soon as the lever had been pressed and

the door opened, the process of learning began. Gradually, each cat learned to associate the action of pressing the lever with the reward of escaping the box and getting to the food.

After twenty to thirty trials, this behavior became so automatic and habitual that the cat could escape within a few seconds. For example, Thorndike noted, “Cat 12 took the following times to perform the act. 160 seconds, 30 seconds, 90 seconds, 60, 15, 28, 20, 30, 22, 11, 15, 20, 12, 10, 14, 10, 8, 8, 5, 10, 8, 6, 6, 7.”

During the first three trials, the cat escaped in an average of 1.5 minutes. During the last three trials, it escaped in an average of 6.3 seconds. With practice, each cat made fewer errors and their actions became quicker and more automatic. Rather than repeat the same mistakes, the cat began to cut straight to the solution.

From his studies, Thorndike described the learning process by stating, “behaviors followed by satisfying consequences tend to be repeated and those that produce unpleasant consequences are less likely to be repeated.” His work provides the perfect starting point for discussing how habits form in our own lives. It also provides answers to some fundamental questions like: What are habits? And why does the brain bother building them at all?

WHY YOUR BRAIN BUILDS HABITS

A habit is a behavior that has been repeated enough times to become automatic. The process of habit formation begins with trial and error. Whenever you encounter a new situation in life, your brain has to make a decision. *How do I respond to this?* The first time you come across a problem, you’re not sure how to solve it. Like Thorndike’s cat, you’re just trying things out to see what works.

Neurological activity in the brain is high during this period. You are carefully analyzing the situation and making conscious decisions about how to act. You're taking in tons of new information and trying to make sense of it all. The brain is busy learning the most effective course of action.

Occasionally, like a cat pressing on a lever, you stumble across a solution. You're feeling anxious, and you discover that going for a run calms you down. You're mentally exhausted from a long day of work, and you learn that playing video games relaxes you. You're exploring, exploring, exploring, and then—BAM—a reward.

After you stumble upon an unexpected reward, you alter your strategy for next time. Your brain immediately begins to catalog the events that preceded the reward. *Wait a minute—that felt good. What did I do right before that?*

This is the feedback loop behind all human behavior: try, fail, learn, try differently. With practice, the useless movements fade away and the useful actions get reinforced. That's a habit forming.

Whenever you face a problem repeatedly, your brain begins to automate the process of solving it. Your habits are just a series of automatic solutions that solve the problems and stresses you face regularly. As behavioral scientist Jason Hreha writes, "Habits are, simply, reliable solutions to recurring problems in our environment."

As habits are created, the level of activity in the brain *decreases*. You learn to lock in on the cues that predict success and tune out everything else. When a similar situation arises in the future, you know exactly what to look for. There is no longer a need to analyze every angle of a situation. Your brain skips the process of trial and error and creates a mental rule: if this, then that. These cognitive scripts can be followed automatically whenever the situation is appropriate. Now, whenever you feel stressed, you get the itch to run. As soon as you walk in the door

from work, you grab the video game controller. A choice that once required effort is now automatic. A habit has been created.

Habits are mental shortcuts learned from experience. In a sense, a habit is just a memory of the steps you previously followed to solve a problem in the past. Whenever the conditions are right, you can draw on this memory and automatically apply the same solution. The primary reason the brain remembers the past is to better predict what will work in the future.

Habit formation is incredibly useful because the conscious mind is the bottleneck of the brain. It can only pay attention to one problem at a time. As a result, your brain is always working to preserve your conscious attention for whatever task is most essential. Whenever possible, the conscious mind likes to pawn off tasks to the nonconscious mind to do automatically. This is precisely what happens when a habit is formed. Habits reduce cognitive load and free up mental capacity, so you can allocate your attention to other tasks.

Despite their efficiency, some people still wonder about the benefits of habits. The argument goes like this: “Will habits make my life dull? I don’t want to pigeonhole myself into a lifestyle I don’t enjoy. Doesn’t so much routine take away the vibrancy and spontaneity of life?” Hardly. Such questions set up a false dichotomy. They make you think that you have to choose between building habits and attaining freedom. In reality, the two complement each other.

Habits do not restrict freedom. They create it. In fact, the people who don’t have their habits handled are often the ones with the *least* amount of freedom. Without good financial habits, you will always be struggling for the next dollar. Without good health habits, you will always seem to be short on energy. Without good learning habits, you will always feel like you’re behind the curve. If you’re always

being forced to make decisions about simple tasks—when should I work out, where do I go to write, when do I pay the bills—then you have less time for freedom. It's only by making the fundamentals of life easier that you can create the mental space needed for free thinking and creativity.

Conversely, when you have your habits dialed in and the basics of life are handled and done, your mind is free to focus on new challenges and master the next set of problems. Building habits in the present allows you to do more of what you want in the future.

THE SCIENCE OF HOW HABITS WORK

The process of building a habit can be divided into four simple steps: cue, craving, response, and reward.* Breaking it down into these fundamental parts can help us understand what a habit is, how it works, and how to improve it.

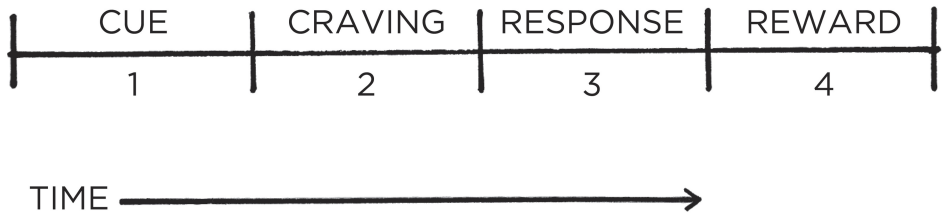

FIGURE 5: All habits proceed through four stages in the same order: cue, craving, response, and reward.

This four-step pattern is the backbone of every habit, and your brain runs through these steps in the same order each time.

First, there is the cue. The cue triggers your brain to initiate a behavior. It is a bit of information that predicts a reward. Our prehistoric ancestors were paying attention to cues that signaled the location of primary rewards like

food, water, and sex. Today, we spend most of our time learning cues that predict secondary rewards like money and fame, power and status, praise and approval, love and friendship, or a sense of personal satisfaction. (Of course, these pursuits also indirectly improve our odds of survival and reproduction, which is the deeper motive behind everything we do.)

Your mind is continuously analyzing your internal and external environment for hints of where rewards are located. Because the cue is the first indication that we're close to a reward, it naturally leads to a craving.

Cravings are the second step, and they are the motivational force behind every habit. Without some level of motivation or desire—without craving a change—we have no reason to act. What you crave is not the habit itself but the change in state it delivers. You do not crave smoking a cigarette, you crave the feeling of relief it provides. You are not motivated by brushing your teeth but rather by the feeling of a clean mouth. You do not want to turn on the television, you want to be entertained. Every craving is linked to a desire to change your internal state. This is an important point that we will discuss in detail later.

Cravings differ from person to person. In theory, any piece of information could trigger a craving, but in practice, people are not motivated by the same cues. For a gambler, the sound of slot machines can be a potent trigger that sparks an intense wave of desire. For someone who rarely gambles, the jingles and chimes of the casino are just background noise. Cues are meaningless until they are interpreted. The thoughts, feelings, and emotions of the observer are what transform a cue into a craving.

The third step is the response. The response is the actual habit you perform, which can take the form of a thought or an action. Whether a response occurs depends on how motivated you are and how much friction is associated with

the behavior. If a particular action requires more physical or mental effort than you are willing to expend, then you won't do it. Your response also depends on your ability. It sounds simple, but a habit can occur only if you are capable of doing it. If you want to dunk a basketball but can't jump high enough to reach the hoop, well, you're out of luck.

Finally, the response delivers a reward. Rewards are the end goal of every habit. The cue is about noticing the reward. The craving is about wanting the reward. The response is about obtaining the reward. We chase rewards because they serve two purposes: (1) they satisfy us and (2) they teach us.

The first purpose of rewards is to *satisfy your craving*. Yes, rewards provide benefits on their own. Food and water deliver the energy you need to survive. Getting a promotion brings more money and respect. Getting in shape improves your health and your dating prospects. But the more immediate benefit is that rewards satisfy your craving to eat or to gain status or to win approval. At least for a moment, rewards deliver contentment and relief from craving.

Second, rewards teach us which actions are worth remembering in the future. Your brain is a reward detector. As you go about your life, your sensory nervous system is continuously monitoring which actions satisfy your desires and deliver pleasure. Feelings of pleasure and disappointment are part of the feedback mechanism that helps your brain distinguish useful actions from useless ones. Rewards close the feedback loop and complete the habit cycle.

If a behavior is insufficient in any of the four stages, it will not become a habit. Eliminate the cue and your habit will never start. Reduce the craving and you won't experience enough motivation to act. Make the behavior difficult and you won't be able to do it. And if the reward fails to satisfy your desire, then you'll have no reason to do

it again in the future. Without the first three steps, a behavior will not occur. Without all four, a behavior will not be repeated.

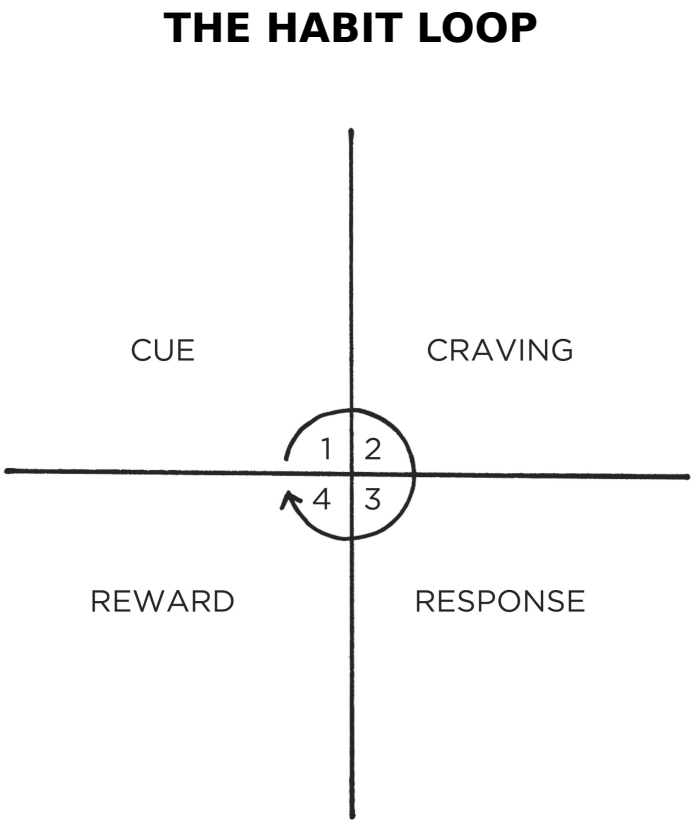

FIGURE 6: The four stages of habit are best described as a feedback loop. They form an endless cycle that is running every moment you are alive. This “habit loop” is continually scanning the environment, predicting what will happen next, trying out different responses, and learning from the results.*

In summary, the cue triggers a craving, which motivates a response, which provides a reward, which satisfies the craving and, ultimately, becomes associated with the cue. Together, these four steps form a neurological feedback loop—cue, craving, response, reward; cue, craving, response, reward—that ultimately allows you to create automatic habits. This cycle is known as the habit loop.

This four-step process is not something that happens occasionally, but rather it is an endless feedback loop that is running and active during every moment you are alive—even now. The brain is continually scanning the environment, predicting what will happen next, trying out different responses, and learning from the results. The entire process is completed in a split second, and we use it again and again without realizing everything that has been packed into the previous moment.

We can split these four steps into two phases: the problem phase and the solution phase. The problem phase includes the cue and the craving, and it is when you realize that something needs to change. The solution phase includes the response and the reward, and it is when you take action and achieve the change you desire.

Problem phase
1. Cue **2. Craving**
Solution phase
3. Response **4. Reward**

All behavior is driven by the desire to solve a problem. Sometimes the problem is that you notice something good and you want to obtain it. Sometimes the problem is that you are experiencing pain and you want to relieve it. Either way, the purpose of every habit is to solve the problems you face.

In the table on the following page, you can see a few examples of what this looks like in real life.

Imagine walking into a dark room and flipping on the light switch. You have performed this simple habit so many times that it occurs without thinking. You proceed through

all four stages in the fraction of a second. The urge to act strikes you without thinking.

Problem phase
1. Cue: Your phone buzzes with a new text message.
2. Craving: You want to learn the contents of the message.
Solution phase
3. Response: You grab your phone and read the text.
4. Reward: You satisfy your craving to read the message. Grabbing your phone becomes associated with your phone buzzing.

Problem phase
1. Cue: You are answering emails.
2. Craving: You begin to feel stressed and overwhelmed by work. You want to feel in control.
Solution phase
3. Response: You bite your nails.
4. Reward: You satisfy your craving to reduce stress. Biting your nails becomes associated with answering email.

Problem phase
1. Cue: You wake up.
2. Craving: You want to feel alert.
Solution phase
3. Response: You drink a cup of coffee.
4. Reward: You satisfy your craving to feel alert. Drinking coffee becomes associated with waking up.

Problem phase
1. Cue: You smell a doughnut shop as you walk down the street near your office.
2. Craving: You begin to crave a doughnut.
Solution phase
3. Response: You buy a doughnut and eat it.

4. Reward: You satisfy your craving to eat a doughnut. Buying a doughnut becomes associated with walking down the street near your office.

Problem phase
1. Cue: You hit a stumbling block on a project at work.
2. Craving: You feel stuck and want to relieve your frustration.
Solution phase
3. Response: You pull out your phone and check social media.
4. Reward: You satisfy your craving to feel relieved. Checking social media becomes associated with feeling stalled at work.

Problem phase
1. Cue: You walk into a dark room.
2. Craving: You want to be able to see.
Solution phase
3. Response: You flip the light switch.
4. Reward: You satisfy your craving to see. Turning on the light switch becomes associated with being in a dark room.

By the time we become adults, we rarely notice the habits that are running our lives. Most of us never give a second thought to the fact that we tie the same shoe first each morning, or unplug the toaster after each use, or always change into comfortable clothes after getting home from work. After decades of mental programming, we automatically slip into these patterns of thinking and acting.

THE FOUR LAWS OF BEHAVIOR CHANGE

In the following chapters, we will see time and again how the four stages of cue, craving, response, and reward influence nearly everything we do each day. But before we do that, we need to transform these four steps into a

practical framework that we can use to design good habits and eliminate bad ones.

I refer to this framework as the *Four Laws of Behavior Change*, and it provides a simple set of rules for creating good habits and breaking bad ones. You can think of each law as a lever that influences human behavior. When the levers are in the right positions, creating good habits is effortless. When they are in the wrong positions, it is nearly impossible.

How to Create a Good Habit
The 1st law (Cue): Make it obvious.
The 2nd law (Craving): Make it attractive.
The 3rd law (Response): Make it easy.
The 4th law (Reward): Make it satisfying.

We can invert these laws to learn how to break a bad habit.

How to Break a Bad Habit
Inversion of the 1st law (Cue): Make it invisible.
Inversion of the 2nd law (Craving): Make it unattractive.
Inversion of the 3rd law (Response): Make it difficult.
Inversion of the 4th law (Reward): Make it unsatisfying.

It would be irresponsible for me to claim that these four laws are an exhaustive framework for changing *any* human behavior, but I think they're close. As you will soon see, the Four Laws of Behavior Change apply to nearly every field, from sports to politics, art to medicine, comedy to management. These laws can be used no matter what challenge you are facing. There is no need for completely different strategies for each habit.

Whenever you want to change your behavior, you can simply ask yourself:

1. How can I make it obvious?
2. How can I make it attractive?
3. How can I make it easy?
4. How can I make it satisfying?

If you have ever wondered, “Why don’t I do what I say I’m going to do? Why don’t I lose the weight or stop smoking or save for retirement or start that side business? Why do I say something is important but never seem to make time for it?” The answers to those questions can be found somewhere in these four laws. The key to creating good habits and breaking bad ones is to understand these fundamental laws and how to alter them to your specifications. Every goal is doomed to fail if it goes against the grain of human nature.

Your habits are shaped by the systems in your life. In the chapters that follow, we will discuss these laws one by one and show how you can use them to create a system in which good habits emerge naturally and bad habits wither away.

Chapter Summary

- A habit is a behavior that has been repeated enough times to become automatic.
- The ultimate purpose of habits is to solve the problems of life with as little energy and effort as possible.
- Any habit can be broken down into a feedback loop that involves four steps: cue, craving, response, and reward.
- The Four Laws of Behavior Change are a simple set of rules we can use to build better habits. They are (1) make it obvious, (2) make it attractive, (3) make it easy, and (4) make it satisfying.