Wendy Wood

INSIDE THE BIG IDEAS

# *Good Habits, Bad Habits: The Science of Making Positive Changes That Stick*

Wendy Wood

## ABOUT THE AUTHOR

**WENDY WOOD IS A RESEARCH PSYCHOLOGIST** who has devoted the last 30 years to understanding how habits work. After completing her graduate degree in psychology at the University of Massachusetts, she went on to be the James B. Duke Professor of Psychology and Neuroscience at Duke University. Currently, she is Provost Professor of Psychology and Business at the University of Southern California, where she also served as Vice Dean of Social Sciences.

A 2008 Radcliffe Institute Fellow, and the 2018 Distinguished Chair of Behavioral Science at the Sorbonne/INSEAD in Paris, Wendy has advised the World Bank, the Centers for Disease Control, and companies such as Proctor & Gamble and Lever Brothers. The author of over 100 scientific articles, she has received numerous awards for her research and teaching. For the last three decades, her research has been continuously funded by the National Science Foundation, the National Institute of Health, and the Templeton Foundation.

# A LETTER FROM ADAM GRANT

Dear NBIC Member,

As long as I can remember, I've had a habit of being late for pretty much everything: meetings, phone calls, weddings. It drives my colleagues—and my wife—crazy. Ask me why, and I can rattle off a list of reasons. I have a chronic inability to disengage from my current task until it's done. Clock time is an arbitrary social construction, like township borders, dress codes, and not ending sentences with prepositions. I'm determined to use every minute productively. Yep, these are explanations, not excuses.

It wasn't until I read *Good Habits, Bad Habits* that I understood how I formed this habit—and how it persists alongside my habit of finishing projects ahead of schedule.

Wendy Wood is the world's leading expert on habits, and as a widely respected psychologist, she's spent much of her career studying how we can make them and break them. Her vibrant writing challenges conventional wisdom and takes you on a tour of the evidence on how to make behavior change stick.

In the spirit of candor, her book hasn't stopped me from being late. But it has helped me show up late less often (and with better justifications). I'd tell you more, but I'm due for a call, and I'm dialing in early. Don't get used to it.

All the best,
Adam Grant

# INTRODUCTION

When it comes to making and breaking habits, conventional wisdom is that the key to success is willpower. If you want something badly enough, then you've just got to keep at it. If you don't get the results you want, it's because you gave up. Your commitment to change wavered.

But according to Wendy Wood, University of Southern California Professor of Psychology and Business and the leading scientist on the nature of habit, conventional wisdom is all wrong. Wood has spent decades researching daily experiences and habits, only to conclude that willpower and determination have little to do with successful habit change.

White-knuckling temptation, in fact, is a scientifically proven path to failure. And those "high control" super-achievers that seem to effortlessly resist temptation—they aren't actually using more self-control than the ordinary person. Instead, they're replacing self-control with habits. By automating their desired behavior, they're *creating* the persistence they need to achieve their goals.

In *Good Habits, Bad Habits,* Wendy Wood provides the first scientifically grounded analysis of habit formation. Drawing on her extensive research, Wood explains the complex processes behind habits, diving deep into the three bases for habit formation: context, repetition, and reward. She goes on to provide a toolkit for how to get rid of old, unwanted habits and how to create new, desired ones. Surprising, practical, and accessible, *Good Habits, Bad Habits* reveals how to form habits that work with us, not against us—and make real change in both our personal and professional lives.

Read on for 10 Big Ideas from *Good Habits, Bad Habits*. And be sure to visit the Next Big Idea Club Member Library to view exclusive Insight Videos featuring author Wendy Wood.

# 10 BIG IDEAS FROM GOOD HABITS, BAD HABITS

## 1) The invisibility of habit hides its enormous power over our lives.

Before learning how to promote good habits and break bad ones, it helps to understand exactly what habits are, and how they function in our lives.

Habits are actions that are performed automatically, without conscious direction. Whether it's brushing your teeth, sending a follow-up email, or pulling out a credit card at the cash register, the range of behaviors that can be classified as habitual is quite broad. Using a research technique called *experience sampling*, in which participants report on what they are doing as they are doing it, Wood ran a study with a group of students at Texas A&M University to investigate the nature of habitual behavior. Every hour, a wristwatch alarm alerted students, who would stop and write down what they were doing and thinking. Based on these results, as well as a follow up study with a larger group, Wood and her team determined that a staggering 43 percent of behaviors were performed out of habit.

Habit refers to *how* you perform an action, not *what* the action is. The key feature of habits is that they work outside of your conscious awareness, so it's easy to overlook their presence in your life. This is especially true when it comes to desirable habits. Usually we notice habits that we don't want—overspending, biting our nails, binge-watching TV shows late at night—whereas the habits that we welcome either go unnoticed or are attributed to our conscious selves.

We assume that, out of love for our children, we read to them before bed every night, or that out of safety concerns, we buckle our seat belts whenever we get in the car. Psychologists call this over-confidence in our thoughts, feelings, and intentions the *introspection illusion*. This tendency to overestimate the extent to which our actions depend on our internal states is a self-flattering myth.

And while this distinction might not seem important, there is, in fact, a huge downside to our conscious mind taking the credit for our unconscious, habitual self—it keeps us from exploiting this hidden resource. Until we acknowledge our habits, both good and bad, our habitual self will remain a silent partner, full of potential energy but never asked to perform to the fullest.

## 2) Context is king.

The first basis of habit formation is *context*. Context refers to all of the external forces that serve to either restrain or drive your actions. Restraining forces increase the friction on something (for example, tobacco laws that hinder smoking), whereas driving forces encourage the behavior (for example, seeing

another person light a cigarette). While internal forces—such as goals, feelings, and attitudes—do exert an influence, when it comes to driving or restraining our actions, the contexts around us are exceedingly powerful.

There is perhaps no easier context we can manipulate than *proximity*. Simply put, we engage with what is near us, and tend to overlook what is far away. Controlled lab experiments and studies have shown that proximity influences everything from what you eat to what you buy to who your friends are. It even affects whether or not you'll go to the gym.

In 2017, a data analytics company reviewed cell phone records from 7.5 million devices, analyzing how far people with mobile devices traveled to paid fitness centers. People who traveled a median distance of 3.7 miles to the gym went five times or more every month. Those who traveled around 5.1 miles went just once a month. All it took was a tiny difference, less than a mile and a half, to separate those who had an exercise habit and those who went rarely.

So instead of beating yourself up when you fail to will yourself healthier, or wealthier, or wiser, simply change your surroundings. Rearrange your kitchen. Avoid that well-meaning coworker who always brings in brownies. Take a route to the office that avoids the coffee shop with the 20-ounce Frappuccinos. Make your life easier by addressing the contexts in which you live. Remove the friction, establish the right driving forces, and let the good habits roll into your life.

### 3) The truth about repetition.

The second basis of habit formation is repetition. How many times, exactly, do you need to repeat an action before it becomes automatic? The popular idea that it takes 21 days to form a habit is, unfortunately, a myth. The real story is more complicated.

In a three-month study conducted in Wood's lab, a postdoctoral researcher tested how many times actions have to be repeated until they feel automatic. Each participant named a new healthy behavior that they wanted to perform regularly. One person, for example, decided to eat a piece of fruit every day at lunch. Another chose to run for fifteen minutes right before dinner. At the end of each day, participants logged whether or not they had performed as planned, as well as how automatic the behavior felt to them.

The results? For eating something healthy, participants had to repeat the action for about sixty-five days before they did it mostly without thinking. Having a healthy drink (for example, a bottle of water with lunch) took only fifty-nine days. Exercise took the longest, with ninety-one days of repeated action required

for the action to become largely habitual. On average, it took participants sixty-five days of repeating a simple health behavior until they experienced it as automatic.

While two months plus a week may sound challenging, there's a reassuring discovery that comes along with that sixty-five day number: Participants could miss a day or two without derailing what they had started. The day they began again, automaticity was almost as high as when they lapsed. This is a crucial finding—you can miss a day or two, and you will not be set back to zero. So wherever you are on your sixty-five day journey, don't despair if you miss a day. Instead, use it as an opportunity to make your context tighter, stronger, and clearer. Your habit is still forming.

### 4) How rewards work.

The third and final basis of habit formation is reward. Context will smooth the way and repetition will jump-start the engine, but if you aren't getting even a minor reward for your initial efforts, you'll never get the habit to start operating on its own.

For rewards to be effective in habit formation, they need to be bigger and better than what you would normally experience. This is because unexpected rewards spur the immediate release of dopamine, a neurotransmitter often called the "feel-good chemical" because it is involved in our experience of rewards. Although science is still discovering much about neuronal timing, dopamine seems to promote habit-learning for less than a minute. Rewards in the future, such as a paycheck bonus in two weeks or an athletic trophy at the end of the season, will not change neural connections in the same way. Rewards have to be experienced right after we do something in order to build habit associations in memory.

Given this timing, the most effective habit-building rewards are often intrinsic to a behavior, usually feelings of pleasure or satisfaction. A study examining exercise habits among college students showed that, predictably, those who rated exercise as a fun activity that made them feel good exercised more often and reported that it was more habitual and automatic. What's particularly interesting, however, is that students who exercised just as often, but who indicated that they went mostly out of guilt or to please others, failed to form a robust habit. They had to keep consciously making themselves go to the gym or track, without a helpful habit taking over.

Eventually, of course, rewards diminish. For scientists, insensitivity to reward is the gold standard for identifying a habit. The only way to know for sure if an action is habitual is to test what happens when the reward changes. If we persist even when we don't value the reward as much, or the reward isn't as available,

then it's a habit. The waning of rewards' effect explains why our newfound frugality persists long after our credit card debt is paid off, and the pride of saving money is a distant memory—our behavior is now on autopilot. Even the very wealthy can get stuck with frugal habits like this. Warren Buffett, chair and CEO of Berkshire Hathaway and one of the richest people in the world, lives in the same home he bought for $31,500 in 1958.

So remember: habits are built in the moment, from our experience of pleasure. We learn habitually when our actions repeatedly bring us more pleasure than our neural systems expect.

### 5) The perils of variety, and the importance of timing.

Habits, as we have seen, thrive on reward uncertainty. Beyond this, habits don't crave variety—in fact, they hate it. Variety weakens habit because variety is the enemy of stable contexts. If you aren't arranging your life to reliably, unfailingly cue your new desired habit, then that habit will never take hold. Only by keeping your life as consistent as possible will your habit grow.

When it comes to bolstering consistency, one of the most powerful context cues is time of day. Over twelve weeks, new gym members in a study developed patterns of exercising at regular times. One reported going every morning at 7:00 a.m., and another went daily after dinner. Others reported that they exercised whenever they could find time. At the end of the study, those who exercised at the same times of day reported that they did so without thinking much about it or reminding themselves to go. For them, exercise had become automated. Those who worked out at inconsistent times weren't so lucky. They seemed to have to rely on that old model, exercising only when they *wanted* to, or when they consciously forced themselves to go.

Timing also matters when we need to take regular medications. A particularly convincing study tested the advantage of time cues for taking oral contraceptives. About half of the participants admitted that they missed doses each month. Among those who missed twice or more a month, only 44 percent had a regular time to take their meds, whereas 90 percent of those who never missed a dose used time cues. It didn't matter when they took the pills—morning, afternoon, evening, or night. Just doing it at the same time was critical.

To our conscious minds, stable cues aren't a big deal—taking pills at different times of day shouldn't matter if you're sufficiently motivated. Yet patient beliefs had no impact on repeated medication compliance. Stable time cues, not motivation, were what kept patients compliant.

## 6) Skip a step with habit stacking.

One especially useful technique from the realm of context consistency is called *stacking*. Stacking involves tying a new behavior to existing cues for an established behavior.

Fire-prevention associations have successfully used this technique for years, campaigning to get people to change their smoke alarm batteries when they change their clocks to and from daylight saving time. We can stack, or *piggyback*, the behavior of replacing batteries on top of adjusting our clocks. The existing behavior is the stable context—you have to do it twice a year. With practice, everything gets cued together: change clocks, replace batteries.

Tying a new behavior to existing cues is a useful life hack for forming a new habit. The new behavior quickly becomes automated because the automaticity is already in place—you just have to add a new step.

For more evidence that stacking works, consider flossing. Many of us brush our teeth regularly, but fail to floss. To test whether stacking increases flossing, researchers gave fifty British participants, who flossed on average only 1.5 times per month, information encouraging them to do it more regularly. Half of the participants were told to floss *before* they brushed at night, and half *after* they brushed. Note that only half of the participants were really stacking—using an existing automated response (brushing their teeth) as a cue for a new behavior (flossing). The other half, who first flossed and then brushed, had no automated cue.

At the end of the month, all participants had flossed, on average, about twenty-four days. Eight months later, however, those who stacked—flossing *after* they brushed—were still doing it about eleven days a month. For them, the new behavior was maintained by the existing habit. The group originally instructed to floss *before* they brushed ended up doing it only about once a week.

As a business strategy, stacking is sometimes called *piggyback marketing*. Two different companies team up so that the carrier company's existing product becomes a cue to use a rider company's complementary one. Piggyback marketing explains how PayPal so quickly gained in popularity, as it was integrated into eBay very early on. While people were making eBay purchases, they got used to seeing and using PayPal, thereby developing a PayPal habit to go with their eBay habit. And then that PayPal habit extended beyond eBay purchases.

Stacking is most successful when the new behavior is compatible with an existing habit. Want to take your meds at night? Put them on your nightstand and take them when checking your phone before bed. If you head out of the office

at 10:00 a.m. to get a coffee at Starbucks, make that the time you answer at least one email you've been putting off. The cues will stack, and soon enough, the pain of answering a difficult email will fold into the reward of the coffee—presto, you have a brand new integrated habit.

### 7) The surprising power of situational control.

Harnessing friction is a great way to increase our effectiveness, but how do we control the friction of our own behavior? One of the best strategies is not to take it on directly—instead, focus on the situation.

Angela Duckworth and her fellow researchers asked a group of University of Pennsylvania undergraduates to list academic goals, such as "study French for an hour every night." For a week, some of these students were instructed to modify their study spaces to minimize temptation: setting reminders or alarms, installing online apps to block distractions like Facebook, or reserving study carrels in the library. A second group of students was told to rely solely on willpower and their ability to resist temptation.

At the end of the week, students rated themselves on a scale from 1 (extremely poorly) to 5 (extremely well) for how successful they were at meeting their study goal. Those controlling their situations scored about half a scale point better than those who tried to simply buckle down with self-control.

Multiple studies confirm that behavior change through self-control isn't as successful as behavior change through altering contexts. Even if it were equally effective (which it's not), controlling our actions simply isn't fun. It means we have to continually fight our desires, remaining eternally vigilant, wretchedly stopping ourselves from doing what keeps coming to mind.

In the study, Penn students who changed their study spaces were not in this unhappy state of war with themselves. After adjusting their surroundings to remove distractions and temptations, students said they didn't experience many unwanted desires. They were not, for example, torn between watching a movie with friends or studying for a test. They had put themselves in the library, where no such alluring possibility existed. They didn't have to consciously force themselves to do the right thing. Instead, they did what was easiest in that environment—study. They didn't have to conquer themselves and deny their urges. They didn't have to be wet blankets, because they had no fire to put out.

Once in place, the forces in our environment continue to cue us to achieve our goals. We can ignore them or take them for granted, but they are still automating

our behavior long after we have forgotten them. And yet, many of us discount the important role that such forces play in our behavior. Instead, we remain in the trenches, fighting to stay motivated and to exert control.

## 8) What French cooking can teach you about habits.

*Mise en place* is French for "put in place," an idea that permeates professional kitchens. Chefs don't start cooking until everything is, literally, in place: their implements at the ready, ingredients measured and chopped, and items ordered as they will be used in the recipe. *Mise en place* reduces friction in the kitchen. It removes the restraining forces that get in the way of making a recipe, and sets up the driving forces to cue it automatically.

Students at the Culinary Institute of America learn this deceptively simple concept on the first day of class, but it's a principle that has power beyond the kitchen. As a former professional chef explained to Wood, he uses *mise en place* at his new job as a teacher, getting everything in order the night before: from setting up the roster, to organizing all of his materials, to establishing a timeline for every upcoming task.

If this sounds like a lot of work for your executive, conscious mind, it is. This level of preparation requires calling on that part of ourselves that projects forward, that plans, that sees patterns, anticipates failures, addresses weaknesses, and designs stopgaps. But while the starting position for some of your most successful habit formations will be highly rational and call on your conscious self, the benefit of the habitual self is that it builds on that starting position, and eventually removes the need for continuing attention. A lot of up-front investment pays off with passive returns for all time.

## 9) Self-control isn't what it looks like.

People who report having a high level of "self-control" are often especially effective at achieving health, wealth, and happiness. As it turns out, however, these individuals *don't* attain their admirable outcomes in the expected way—by actively exerting willpower. Their success is not due to some superhuman ability to resist urges and inhibit unwanted actions. People who score high on "self-control" scales aren't using control at all, but forming habits to automate their behavior. In short, habits make it easy to accomplish their goals.

The talents of high "self-control" people extend beyond just knowing how to form beneficial habits. They also seem to understand how to put themselves into contexts with the right forces to achieve their goals, taking advantage of context cues and engaging situational control. For example, in an online survey, individ-

uals who scored high on a "self-control" scale also agreed with statements like "I choose friends who keep me on track to accomplishing my long-term goals," and "When I work or study, I deliberately seek out a place with no distractions."

As you set out to develop new habits, you're going to quickly re-discover something that you intuitively knew in advance: the greatest source of friction in this world is other people. They are both helpful and detrimental influences on our desired selves.

People with high "self-control" not only know this, but also act on it. College students in one study chose one of two partners to work with on a task (actually, experimental accomplices). "Alex" was supposedly undecided on his major, spent his spare time playing video games and partying, and mostly slept late during winter break. "Taylor" was a premed student with a part-time job who volunteered at an animal shelter and studied during winter break. Participants who had earlier scored high on "self-control" mostly wanted go-getter Taylor as a work partner, whereas low scorers were equally likely to select Alex the slacker or Taylor the achiever.

Not everyone recognizes the way our environments influence us. But like the University of Pennsylvania students, we can all start to benefit from this insight, and acquire the trained eye of someone high in "self-control."

## 10) Happiness and the mindfulness habit.

Many of us are guilty of overthinking things, generating anxiety and preventing ourselves from getting anything done. And in recent years, a new appreciation for "mindfulness" has cropped up as an attempted solution to this "overthinking" menace.

But it turns out that minding our habits is perhaps the most natural and effective path to inner calm. A habitual mind is a *benignly thoughtless* mind. It is a mind that sorts tasks into their proper places. It is not obsessed with figuring out when you fall asleep; instead, it just responds to the sleep cues in your context, and you drift right off.

Acting habitually has broader effects as well, reducing uncertainty and promoting feelings of coherence and comprehension of our experience. In a survey of daily routines, people who reported that they do "pretty much the same things every day" found life more meaningful. When contacted during their day, people reported more meaning in life when performing actions that were part of a routine. It turns out that we can discover meaning in life by simply maintaining a tidy office, keeping a daily schedule, having weekly dinners with friends, or walking the same path to work or school every day. This is the coherence of an ordered life. And it's a coherence attainable by all of us.

# TALKING POINTS

*Shareable Stories, Facts, and Figures from* Good Habits, Bad Habits

Studies have shown that, on average, **43 percent of the time our actions are habitual, performed without conscious thought**. These activities include daily hygiene (88 percent), tasks at work (55 percent), exercise (44 percent)—even resting, relaxing, and sitting on the couch were performed habitually much of the time (48 percent).

If you ever feel like you aren't very aware of your habits, and would like to be, here's a simple trick: **go public**. Just being around other people is usually enough to turn the spotlight inward and to start to monitor what you ordinarily would do without much scrutiny.

**We often underestimate the benefits of persistence, especially when it comes to creativity.** Multiple studies involving creative tasks have shown that while participants expect decreasing returns for their continued efforts, when specifically instructed to persist (for example, comedians who were told to generate additional funny endings to sketches), they generated not only more solutions than anticipated, but also more creative ones. In contrast to the comedians' expectations, independent evaluators rated the solutions generated at the end of the session as more creative than the ones produced initially.

**One of the reasons we don't know much about our own habits is that they aren't accessible to consciousness.** When we repeatedly do the same thing the same way, our brains store these automatic scripts, called *procedural memory*, somewhat separately from other memory systems. This kind of cognitive coding is a sort of mental equivalent of admin-only files on your computer.

**Acting based on habits has the additional benefit of freeing our conscious mind to do other tasks.** This is why both Barack Obama and Mark Zuckerberg wore almost the same thing every day (Obama wore a blue or gray suit, Zuckerberg a gray t-shirt). Each identified a wardrobe choice that fit their position, and then stuck with it, thus avoiding the distracting, conscious choices about what to wear every day.

You might think you're eating because you're still hungry, but studies have shown that **we eat in response to available cues: as long as there's food on our plate, we keep going.** In a cafeteria study, patrons on several days got the standard serving of pasta and cheese (1,800 calories) and consumed almost all of it (1,700

calories, on average). On other days, researchers had the cafeteria increase the portion so that the dish was 50 percent larger (2,600 calories). As a result, patrons ate 43 percent more (2,400 calories). When surveyed after the meal, all patrons judged that the amount they ate was comparable to the amount they usually ate for lunch. They also said that the servings were the appropriate size for them.

**When it comes to forming and breaking habits, willpower isn't much help—especially when stacked up against nicotine.** The Centers for Disease Control report that 68 percent of smokers say they want to quit completely. However, each individual attempt usually fails. Only about one in ten attempts to stop smoking for good succeeds. Most people end up relapsing, typically within a week. To quit successfully can take thirty or more attempts.

**A common strategy for building new behaviors onto existing cues involves *swapping* one behavior for another.** The habit cues that automatically activated an old response can be co-opted to activate a new, similar response. Swapping explains the immediate popularity of soy milk—without much thought, lactose-intolerant consumers started to use it as a substitute for cow milk. Tofu had a rockier start in U.S. markets—it could not easily be integrated into standard American recipes because it did not cook like animal proteins or cheese. (Eventually, tofu was incorporated into ice cream and gained some popularity as a dairy substitute.)

**Habits are strong under stress.** Contrary to popular belief, habits aren't challenged when they encounter stress. Just the opposite: after a habit has been formed, stress *activates* it. Just keep in mind that this applies to both good and bad habits.

# INTERACTIVE: CREATE YOUR NEW HABIT

It's time to put what you've learned into practice! First, make a list of three new daily habits that you'd like to develop:

Habit 1:_____

Habit 2:_____

Habit 3:_____

Now for each of these habits, think of an existing habit that you can easily attach it to. For example, say you'd like to start running every morning. Without too much trouble, you could "stack" that new habit onto your existing habit of, say, walking your dog. These two habits are compatible because walking your dog makes it easy and natural to start your run. After all, you already have your running shoes on, and you're already outside.

So for each of the three new habits you listed above, think of an existing, compatible habit of yours with which it could stack nicely:

Habit 1 stack:_____

Habit 2 stack:_____

Habit 3 stack:_____

Now pick the new habit you'd most like to develop, and try it out for a week.

How did it go? Are there any modifications you need to make? One idea is to increase the rewards component, as we are more likely to repeat actions that we enjoy. If you're struggling to maintain your new running habit, for example, figure out a way to make it fun. Maybe listen to a good podcast while you jog—even something as minor as this can do the trick.

Reward 1:_____

Reward 2:_____

Now integrate one of these new rewards into the habit, and get back to it. Aim for that sixty-five day number!

And remember, when forming a habit, you can miss a day or two without having to start from scratch—the important thing is to keep at it. If you catch yourself faltering, revisit the three fundamental components of habit formation: context, repetition, and reward.

# QUIZ

*Time for a pop quiz! Studies show that tests and quizzes can boost your recall of what you've read. So get ready to lock in your learning about the ins and outs of habit formation.*

**1) Habits are more likely to form when…**

A) we carefully consider our actions in advance.

B) we behave erratically.

C) we act repeatedly and consistently.

D) we keep a daily journal.

**2) Which of the following statements is true?**

A) Habits thrive on reward uncertainty.

B) Only by keeping your life as consistent as possible will your habit grow.

C) Both A & B

D) None of the above

**3) Decisions and willpower draw on what we call *executive control* functions in the brain, which are…**

A) thoughtful cognitive processes to select and monitor actions.

B) intuitive responses to stimuli.

C) fast-acting and unconscious.

D) heavily reliant on the amygdala.

**4) *Habit stacking* is most successful when…**

A) the new behavior is difficult to accomplish.

B) the new behavior is compatible with an existing habit.

C) both behaviors are complicated and multi-layered.

D) the old behavior is unpleasant.

**5) You can make almost any behavior more habitual as long as you…**

A) really want it.

B) continually vary your approach.

C) ignore it.

D) do it the same way every time.

**6) Which of the following is NOT one of the three bases of habit formation?**

A) Context

B) Repetition

C) Reward

D) Reflection

**7) Habit memories simplify our lives by solving the everyday challenges of making decisions in an environment filled with choices. In psychology, we call this process of binding together bits of information into a coherent whole…**

A) chunking.

B) displacement.

C) priming.

D) sublimation.

**8) Studies have shown that the positive effects we popularly ascribe to "self control" are, in fact, more accurately captured by…**

A) ego striving.

B) distraction.

C) situational control.

D) social support.

**9) True or False: Rewards have to be experienced right after we do something in order to build habit associations (context-response) in memory.**

A) True

B) False; dopamine effects play out over a timescale of hours.

C) False; rewards are irrelevant to habit formation.

D) False; long-term extrinsic rewards are stronger motivators.

**10) *Mise-en-place* reduces friction by…**

A) removing the restraining forces that get in the way of the desired behavior.

B) setting up the driving forces to cue the desired behavior automatically.

C) Both A & B

D) None of the above

Answer Key:
1C, 2C, 3A, 4B, 5D, 6D, 7A, 8C, 9A, 10C

# NOTES




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