Behavior Change: Part 1

Behavior change entails making intentional efforts to improve lifestyle, until those changes become ingrained as habits. Here are three specifics about cultivating good habits:

- Developing good habits is important for health and wellbeing
- Most good habits are related to developing better self-control
- Self-control critically depends on developing greater patience

Let's talk about these three topics – habits, self-control, and patience

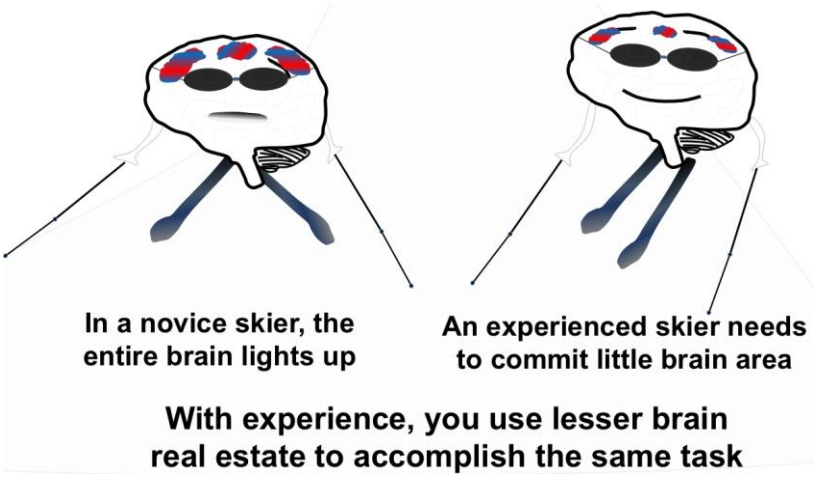
HABITS

My cousin works at an international company as a new-projects manager. His team picks the projects; thinks about the infrastructure, marketing, budgetary, and other needs; and then brings the project to execution. Once the project is executed, it goes to a different team. As the project matures, becomes part of the ecosystem, and is refined to a science, fewer and fewer personnel are needed. Further, those working on a mature project often aren't the masters of innovation. Their expertise is in diligently following an established protocol. The brain works the same way.

Skillful Delegator

Go back to the first time you played piano or violin (or any other skill you learned). Would you have appreciated a phone call at that time? No, because your attention was used up in figuring out the details of playing the instrument. But now you can effortlessly play while talking, singing, or even watching a movie. This is because as you go from novice to expert, the neural real estate needed to host the activity goes down dramatically.[1-3]

If I am skiing or driving a race car, my entire brain will turn red and purple on a functional MRI compared to an expert, whose MRI will show minimal activity. Here is the tactical shift that happens in the brain: the conscious action during training needs a lot of cerebral-cortex activity, but when the behavior becomes programmed, the cerebral



cortex delegates the workload to the automatically driven subcortical parts of the brain (the basal ganglia).[4,5]

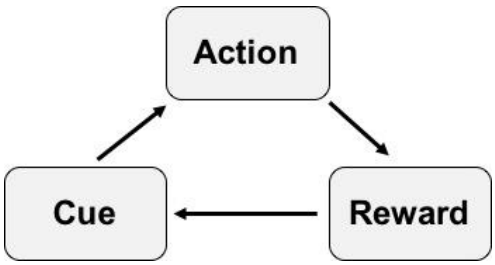
Such behavior, repeated enough times, becomes automatic. It becomes a habit.

Habits

Our actions during the day can be classified into two broad types: intentional and habitual. Intentional actions need conscious attention. Driving in a new neighborhood, assembling a dollhouse, playing chess—all need intentional focus.

Habits are automatic behaviors triggered by cues. We swim in our habits. About half of what we do on most days is driven by habit. How much attention do you pay to washing your hands after using the restroom, changing clothes, or turning on the lights at night? Actions driven by habits need little conscious attention.[6]

We form these habits over a lifetime. We repeat patterns of behaviors that help us reach our goals. The resulting reward (pleasure, relaxation, success, gain, or win) keeps it going. This is the automatic cycle in which we spend half our day.



The automation of the habit circuits comes with two costs. The first is that during habitual activity, we are less likely to pay attention and more likely to mind wander.[7] The second is that it creates serious vulnerability if your reward comes from an activity or chemical that can be destructive in the long term. The cue (stress), when linked with the habit (smoking) that gives the reward (a relaxed feeling), will lock you into a lifetime of smoking. You won't even know when you light up the cigarette. Prolonged sitting, multitasking, comfort foods, angry outbursts—all of these and many more behaviors become habitual because they feed our hunger for short-term gratification. Try swapping smoking for a relaxing book, music, deep breathing, or prayer when you feel stressed. That'll be much more adaptive. I so wish it was that simple and easy.

Habits are powerful. Once formed, they are difficult to break. In a study on habitual popcorn eaters, participants showed clear preference for fresh popcorn over stale popcorn. But when given stale popcorn in a movie theater, they ate as much as participants who received fresh popcorn. Hunger had minimal influence on how much they ate.[8]

Any effort to change an ingrained behavior has to cross the habit hump. This hump can't be crossed just through education. Educational programs provide strategies and change short-term intentions, but they aren't enough to change the behavior.[9,10] The key to change and form good habits is developing a better self-control.

SELF-CONTROL

Self-control is your ability to regulate temptations and impulses. The greater your self-control, the higher your ability to say and do what is right, and not just what is pleasurable. Self-control helps you focus on the long-term.

Scientists have discovered that a healthy self-control (formally called self-regulation) is associated with all sorts of good outcomes, ranging from higher SAT scores to better jobs, healthier habits, lower risk of divorce, lower addiction, better emotional health, higher self-worth, better physical health, and even longer life.[11-14] You are also more likely to trust people who demonstrate better self-control.[15]

The key connection is between self-control and the ability to make good decisions. Research shows that half of the premature mortality in the United States is because of poor choices.[16] If we improve people's ability to make and stick with better choices, we could make a significant dent on chronic illness.

Another way to look at self-control is through the lens of willpower. Willpower is your ability to exercise self-control. You can look at willpower as the core cognitive and emotional strength that you use to lift the load of life.

Several researchers have noted that we have a finite bucket of willpower. Pain, physical illness, sleep deprivation, argument, loss, insult, regret, hostility, anxiety, depression, stress of any kind, exercising self-restraint – they all deplete our willpower. For example, research shows that the same calorie-dense food that may look uninteresting to a peaceful brain looks highly appetizing to a stressed-out brain.[17,18]

A state of low willpower with depleted self-control in most situations leads to a loss of patience.

(IM)PATIENCE

Although patience is decidedly desirable, impatience is our genetic default. We arrive in the world very impatient, with an extraordinarily narrow zone of comfort. A little change here or there—whether that means becoming wet, cold, hungry, overfed, overstimulated, bored, or alone—and we start loud, annoying exhalations (grown-ups call them crying). Despite a crammed schedule during the first few days after arrival, every day we still find two hours for these loud exhalations.

Our me-first attitude, however, can last for only so long. Eventually we have to learn to be willing to wait and postpone gratification. Research, however, suggests that not all of us become patient as we age. No one loves inching traffic, forgetful servers, slow Internet connections, or long checkout lines. People start abandoning a website or a

video at about the two-second threshold.[19] As I examine my life, I realize that I have struggled all my life with an impatient brain.

- I seldom brush my teeth for the recommended two minutes
- I struggle when it takes too long for the water to turn hot in the shower
- The ninety seconds it takes to warm my cereal in the microwave feels painful
- I never wait for the car engine to warm up on a day when it is twenty below zero outside
- Traffic lights are agonizing, particularly the long ones that keep me waiting for more than a minute while every car from the other three directions seems to be moving
- The slow elevators test my patience
- I give up on a video if it doesn't load in a few seconds
- I have to work hard so I don't interrupt others in a meeting, and sometimes I fail
- I dread meeting people who take more than thirty seconds to come to their point

Here is how our impatience can hurt us.

Hazards of Impatience (Benefits of Patience)

The opposite of patient isn't impatient; it's anxious, angry, injured, or even dead. You know the hazards of impatience if you have shared the road with a few impatient drivers. The outcome can range from annoying to life threatening. Impatience increases the speed of life and interferes with deep thinking. Impatience keeps the attention superficial. Superficial attention predisposes us to quick judgments, which often have a negative bias. Impatience hurts every aspect of our lives: health, happiness, relationships, lifestyle, and work.

Impatience and health. An impatient mind hurts the physical body in which it resides. If you have diabetes, then the lower your patience, the poorer the control of your blood sugars and lower your compliance with the treatment.[14] Hypertension, migraine, and ADHD are other conditions associated with impatience.[11,20-22] Through its association with diabetes and hypertension, impatience is connected to adverse cardiovascular health. Impatience even affects us at the level of our chromosomes. In a study involving 1,158 university students, impatience was found to be associated with shorter telomeres, a marker of accelerated aging.[23] The only thing impatience speeds is our aging. Patience works just the opposite. For example, in patients with heart disease, nurturing greater patience decreased coronary reinfarction rates by 44 percent.[24]

Impatience and happiness. Patience correlates with mental well-being, whereas impatience is associated with depression, anxiety, and stress.[25] Moment-to-moment patience is associated with greater life satisfaction and well-being.[12]

Impatience and relationships. Impatience has been associated with relationship infidelity.[26] In a study involving medical practitioners, impatience was associated with the spouse's marital dissatisfaction, while achievement striving was not.[27] Impatience

and intolerance are the hidden factors behind many crimes. If you are driving slowly, you are likely to be honked at, but you also could get shot. Such impatience-fueled senseless crimes seed regrets and sorrows of a lifetime every single day.

Impatience and lifestyle. Impatience and its cousin, impulsiveness, are associated with many bad habits that plague our well-being: overeating,[28,29] substance use and abuse,[30,31] and pathological gambling.[32] In several studies, impatience has also been associated with road-traffic accidents.[33,34]

Impatience also breeds many different kinds of rage in our society. I first heard of road rage when I was in my twenties. Then came air rage. Now we have a plethora of rages: sports rage, parking-lot rage, vending-machine rage, computer-crash rage, low-cell-phone-battery rage, and more. We are innovating new forms of rage while doing little to innovate new ways to be patient or compassionate.

One of the biggest risks of impatience is that the resulting lack of self-control can lead to different forms of addiction. Tobacco, alcohol, cocaine, meth, opiates, sleeping pills, calorie-dense food, sex, gambling…there is a long list of chemicals, behaviors, and hobbies to which we get addicted.[31,32,35,36] Addiction isn't just about spending a little time and money. It can become an obsession, leading to an entire life invested in seeking the addictive agent. Sometimes it can lead to death. Drug overdose is now the leading cause of mortality in people younger than fifty.[37]

Addicted people aren't the stupid or the weak. Just as often, the smartest people, leaders of our society and businesses, get caught in the whirlpool. Why would they surrender their life's work to some chemicals? It is because these chemicals are very powerful. They stimulate the reward center—the core machinery that drives our sense of pleasure. When lacking patience, we want the reward center stimulated ASAP and can't wait for any future moment.

The studies in mice are instructive. The mice press the lever to stimulate their reward center, quit all eating, and eventually die of exhaustion.[38] Such is the power of these agents to which we are vulnerable because of our predisposition to get addicted to short-term gratification.

Impatience and success. Although time pressure may look like pure adrenaline, impatience is associated with worse academic and financial outcomes.[13,39] Further, the impatient, even if they hold rewarding jobs, are less likely to be satisfied with them.[40]

The Mechanics of Impatience

Our impatience originates in a phenomenon called delay discounting (also called time discounting or temporal discounting).[41] This is your ability to tolerate delays and postpone gratification.[41] The more you discount the value of the future reward, the greater your impatience. This trait is seen in most animal species, whether they're humans or pigeons.[42]

The brain values immediate gain over long-term gain. A dollar today is worth more than a dollar in a month or perhaps even two dollars in a month. Our brain discounts the gain, adjusting for the value of time. Thus, most of us would be willing to forgo a dollar today in favor of a million dollars in a month. As you decrease the value, a point comes when people aren't willing to wait for the delayed reward. This threshold is different in different people.

This threshold depends on a combination of nature and nurture.

Impatient? You Can Blame Your Genes

Up to 50 percent of delay discounting is genetic.[43,44] Researchers are now finding specific impatience genes that might explain why one infant frets every hour while another lets you watch your favorite TV show even when he or she has a wet diaper.

The amount of dopamine in the prefrontal cortex may have something to do with this. Scientists have discovered an enzyme that breaks up dopamine, called COMT. This can be more or less active depending on your genetic makeup. When COMT is more active (Val type), you have lower dopamine in the prefrontal cortex and thus lower patience.[45] The guy who honked at you at the traffic light likely has Val-type COMT and is trapped in impatience because of lower prefrontal-cortex dopamine. When someone cuts you across on the road, instead of calling him jerk, label him "the low prefrontal dopamine guy." It will make forgiveness easier! This can apply to many life situations.

I find it very empowering that we are able to connect genetic configurations with brain structure and function and our behaviors.[46,47] There is a scientific term for this connection: brain-based endophenotypes. Understanding each other is an early step in becoming more compassionate.

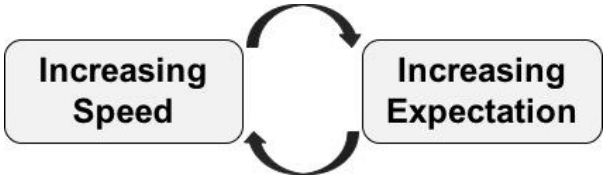
The same is true for understanding our children. I used to be more impatient with my daughters when I was late for an important meeting and they were arguing about pink versus purple hair clips. Now, having read studies that show that the prefrontal cortex matures only late into adulthood,[48] I have become more patient—and also more hopeful!

You can use the fifty-fifty division of nature versus nurture for patience to your advantage. **Blame your genes for your impatience; pat yourself on the back for your patience**. Now, that's freeing! As an aside, a lot of different aspects of our lives—well-being, happiness, risk of depression—follow this fifty-fifty rule. I choose to feel both validated and empowered by it. Why not?

It's Not Just the Genes

Our genetic and evolutionary vulnerability to impatience has met a world that is fueling

the patience-deficit disorder. Here are a few reasons we are becoming increasingly impatient.



Our pace of life is accelerating, governed by the speed of Internet search engines. People will prefer a competitor's website if yours is 250 milliseconds slower. Every business I know rewards speed. Everything else being the same, you'll be less likely to visit a slower restaurant, grocery store with slower checkout line, slower mail career, slower anything. What is rewarded influences our behavior. A society that in the short-term rewards impatience is going to become impatient.

One online retailer found that for each extra second its website takes to load, it risks losing close to $2 billion in yearly revenue.[49] The natural response is to develop the technology that speeds the website, which leads to our expectation for the website to be fast. When the websites are faster, we start expecting our spouses, kids, parents, friends, and clients to operate with the speed of a search engine.

Rising stress in the world wreaks havoc on the brain networks that host deep thinking, focusing, and reframing. Research shows that the sadder we are, the greater our economic impatience.[50]

The world is rife with competition. When I was younger, we kept the same phone for at least two decades. Not so now. Product cycles for many items have shortened to a few months. Software and designs quickly become obsolete. Companies have to constantly innovate to survive. All of this leaves little room for error and patience.

An interesting study showed that our way of eating, specifically fast food, increases impatience. In this study, researchers found that subconscious exposure to fast-food symbols increased participants' reading speed even when they had no need to hurry. The more participants thought about fast food, the greater their preference for time-saving products. Further, exposure to fast-food symbols decreased participants' preference to save. Instead, they chose immediate gains while forfeiting future returns, hurting their overall profits.[51] I hope investment bankers are familiar with this research. It might improve their eating habits. This is particularly important, because we have reached a point at which research shows that chimpanzees can exercise greater self-restraint than we can when it comes to eating.[52]

Having understood some of the key scientific perspectives of habits, self-control and patience, let's now turn to discussion a few strategies to improve self-control, patience, and thus positive habits.

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