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Published New York Times: May 4, 2008

HABITS are a funny thing. We reach for them mindlessly, setting our brains on auto-pilot and relaxing into the unconscious comfort of familiar routine. “Not choice, but habit rules the unreflecting herd,” William Wordsworth said in the 19th century. In the ever-changing 21st century, even the word “habit” carries a negative connotation.

So it seems antithetical to talk about habits in the same context as creativity and innovation. But brain researchers have discovered that when we consciously develop new habits, we create parallel synaptic paths, and even entirely new brain cells, that can jump our trains of thought onto new, innovative tracks.

Rather than dismissing ourselves as unchangeable creatures of habit, we can instead direct our own change by consciously developing new habits. In fact, the more new things we try — the more we step outside our comfort zone — the more inherently creative we become, both in the workplace and in our personal lives.

But don't bother trying to kill off old habits; once those ruts of procedure are worn into the hippocampus, they're there to stay. Instead, the new habits we deliberately ingrain into ourselves create parallel pathways that can bypass those old roads.

“The first thing needed for innovation is a fascination with wonder,” says Dawna Markova, author of “The Open Mind” and an executive change consultant for Professional Thinking Partners. “But we are taught instead to ‘decide,’ just as our president calls himself ‘the Decider.’ ” She adds, however, that “to decide is to kill off all possibilities but one. A good innovational thinker is always exploring the many other possibilities.”

All of us work through problems in ways of which we're unaware, she says. Researchers in the late 1960s discovered that humans are born with the capacity to approach challenges in four primary ways: analytically, procedurally, relationally (or collaboratively) and innovatively. At puberty, however, the brain shuts down half of that capacity, preserving only those modes of thought that have seemed most valuable during the first decade or so of life.

The current emphasis on standardized testing highlights analysis and procedure, meaning that few of us inherently use our innovative and collaborative modes of thought. “This breaks the major rule in the American belief system — that anyone can do anything,” explains M. J. Ryan, author of the 2006 book “This Year I Will...” and Ms. Markova's business partner.

“That’s a lie that we have perpetuated, and it fosters mediocrity. Knowing what you’re good at and doing even more of it creates excellence.”

This is where developing new habits comes in. If you’re an analytical or procedural thinker, you learn in different ways than someone who is inherently innovative or collaborative. Figure out what has worked for you when you’ve learned in the past, and you can draw your own map for developing additional skills and behaviors for the future.

“I apprentice myself to someone when I want to learn something new or develop a new habit,” Ms. Ryan says. “Other people read a book about it or take a course. If you have a pathway to learning, use it because that’s going to be easier than creating an entirely new pathway in your brain.”

Ms. Ryan and Ms. Markova have found what they call three zones of existence: comfort, stretch and stress. Comfort is the realm of existing habit. Stress occurs when a challenge is so far beyond current experience as to be overwhelming. It’s that stretch zone in the middle — activities that feel a bit awkward and unfamiliar — where true change occurs.

“Getting into the stretch zone is good for you,” Ms. Ryan says in “This Year I Will... .” “It helps keep your brain healthy. It turns out that unless we continue to learn new things, which challenges our brains to create new pathways, they literally begin to atrophy, which may result in dementia, Alzheimer’s and other brain diseases. Continuously stretching ourselves will even help us lose weight, according to one study. Researchers who asked folks to do something different every day — listen to a new radio station, for instance — found that they lost and kept off weight. No one is sure why, but scientists speculate that getting out of routines makes us more aware in general.”

She recommends practicing a Japanese technique called kaizen, which calls for tiny, continuous improvements.

“Whenever we initiate change, even a positive one, we activate fear in our emotional brain,” Ms. Ryan notes in her book. “If the fear is big enough, the fight-or-flight response will go off and we’ll run from what we’re trying to do. The small steps in kaizen don’t set off fight or flight, but rather keep us in the thinking brain, where we have access to our creativity and playfulness.”

Simultaneously, take a look at how colleagues approach challenges, Ms. Markova suggests. We tend to believe that those who think the way we do are smarter than those who don’t. That can be fatal in business, particularly for executives who surround themselves with like-thinkers. If seniority and

promotion are based on similarity to those at the top, chances are strong that the company lacks intellectual diversity.

“Try lacing your hands together,” Ms. Markova says. “You habitually do it one way. Now try doing it with the other thumb on top. Feels awkward, doesn’t it? That’s the valuable moment we call confusion, when we fuse the old with the new.”

AFTER the churn of confusion, she says, the brain begins organizing the new input, ultimately creating new synaptic connections if the process is repeated enough.

But if, during creation of that new habit, the “Great Decider” steps in to protest against taking the unfamiliar path, “you get convergence and we keep doing the same thing over and over again,” she says.

“You cannot have innovation,” she adds, “unless you are willing and able to move through the unknown and go from curiosity to wonder.”

Janet Rae-Dupree writes about science and emerging technology in Silicon Valley.