FEATURE

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THE SCIENCE OF CHANGE: WORKING WITH—NOT AGAINST—OUR INNER SYSTEMS

BY HAL WILLIAMSON WITH SHARON EAKES

I cannot count the times I have heard individuals announce, with great certainty, New Years resolutions by which they intend to change their behavior. To their own surprise, no matter how determined or resolute their initial intention to change, they often fail. Why this happens is readily explainable by examining the basic nature of the human brain.

Over your lifetime, neural circuits have become embedded with all of the behaviors that allow you to engage the world in a free-flowing manner, without any conscious mental effort on your part. These neural circuits are your autopilot.

For many years, I drove to work on the same route every day. My office was in the suburbs, just off a parkway that went on through to the center of the city. I was promoted, and my new office was in the center of the city. In the years that followed, there were a number of occasions when I found myself in my car, parked in my old parking space at my earlier job site. I had been driving to work, deep in thought, on autopilot. It was always slightly embarrassing to find myself backing out of my old parking space and waving at the company security guards as I exited the property only moments after having arrived.

TEAM TIP

Organizational transformation often has its roots in personal change. This article describes a process for making sustainable behavior changes at an individual level. If possible, partner with a colleague to encourage each other through setbacks and celebrate successes.

Knowing about neural circuits and the behaviors they produce, it is easy to explain my unintentional trips to my old place of work. At any given time, we have lots of neural circuits that were used in a previous stage of our lives but are not called upon in the present. Thankfully many new ones have been laid, allowing new behaviors, and because of their repeated use, they dominate our inward thoughts and outward behaviors. When that happens, we've reset our autopilot. But the process can take time—during which we often grow frustrated with the length of the change process and revert to old behaviors.

How We Resist Change

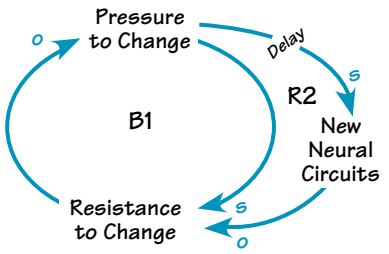
Imagine holding a sponge rubber ball between your hands with your fingers interlocked. Squeeze the ball between the heels of your hands. As you squeeze, what do you notice about the pressure of the ball on the heels of your hands? The harder you push on the ball, the harder the ball pushes back. The ball wants to get back to its original position (see "Maintaining Equilibrium").

Something similar happens to people. Psychologists tell us that when we are pushed, we resist by pushing back with behaviors that keep the mental pressure in balance, subconsciously hoping that the party or parties applying the pressure will relax their efforts and allow us to return to long-established patterns of behavior. (Ironically this is true even when the push is internally generated. We want to change, but oh, how much more comfortable it is not to do so!) Whenever we are pushed mentally, the natural human response is to feel anxious, upset, or angry.

People in situations where there is an unrelenting mental pressure to change tend to respond subconsciously by slowing down. In manufacturing facilities where management pressure to perform is excessive, workers often become mentally distracted and make manufacturing errors, which then require rework. Management points to the rework as evidence that the employees are sabotaging the manufacturing process. The cause may seem to be workers, but may actually have its origin in actions of management.

All human systems, because they are systems, inherently seek equilibrium and shake off external pressures, whether those pressures are mental or physical. This normal resistance to change explains why it is so difficult to get individuals, let alone large numbers of people in teams and organizations, to act differently. It was recognition of this fact that led Sharon to become a personal and executive coach. She noted that participants were often energized by a training program, but usually went right back to doing things in their old, habitual ways.

MAINTAINING EQUILIBRIUM



Psychologists tell us that when we are pushed to change, we resist by returning to long-established patterns of behavior. The key to lasting change is to establish new neural circuits that supplant the old ones.

Regular coaching sessions over several months drive the development of new neural circuits and help people integrate new ways of thinking and behaving into their lives.

The Subconscious System

Scientists have found that, as we go through life, we establish neural networks that record all of our sensory experiences. I find it helpful to think of this mass of neural circuits as our "subconscious system," in which all of our experiences and our thoughts about our experiences are stored in an interconnected manner. These include our attitudes, assumptions, beliefs, stories we tell ourselves, etc. It is this subconscious system that defines the state of current reality for each of us.

We are not consciously aware of current reality until we run into something that doesn't match our expectations. As long as our experience matches the contents stored in our subconscious system, we don't notice our surroundings. For many individuals, this match appears to others as a state of contentment. Individuals who have all their health and survival needs met may be quite contented even though they live in circumstances others may view as unacceptable.

The subconscious system of each individual is unique. This can cause problems even in intimate relationships—when you assume your partner needs the same set of circumstances you do to feel contented. What is stored in his or her mind about the requirements for contentment may not match those stored in your mind!

Any outside stimulus that opposes the mind's inner equilibrium will cause it to push back and resist. The resistance is experienced as a state of internal discomfort.

Within the human mind/brain/body system, we also have a huge set of neural circuits that have captured our accumulated thoughts about the future. These include our goals, visions, plans, and the way we want or expect our future world to be. These are by-products of our imagination.

Imagination is defined as the process or power of forming a mental image of something not real or present. I like to think of the neural network containing our thoughts about the future as the mind's "future subconscious system."

We have said that when our mind creates thoughts that are inconsistent with our experiences, habits, attitudes, and beliefs, we experience mental pressure. The subconscious system pushes back in an effort to maintain system equilibrium. This response from the subconscious arises without regard to whether we really *want* to change, we tell ourselves we *have* to change, or some source of pressure outside us *demands* that we change. Both inside and external demands for change evoke the same feelings of anxiety and an attendant equilibrium-seeking system push-back.

So, how can we overcome these forces that work to maintain the status quo? One way is through *affirmations.*

The Neuroscience Behind Affirmations

What is an affirmation? An affirmation is a declaration that something is true. It is a statement of fact. When tagged with emotions, affirmations create strong, new neural circuits. These new circuits have the capacity to alter old, unwanted behaviors in favor of new, desired behaviors.

People have been practicing affirmations since the dawn of time. In recent years, affirmations have been recommended by many self-help movements. Countless people have testified to the power of affirmations in altering their lives in a positive way. Although the anecdotal evidence is legion, only in the recent past has research in neuroscience, neurobiology, cognitive psychology, and systems thinking provided insight into the probable scientific explanation of why and how the affirmation process works.

Many people have trouble with the notion of affirmations. It tends to sound a little woo-woo, like a magical incantation of some kind. We will now introduce the concept of affirmations and their use in conjunction with visualization, and talk about both why and how they work.

I was first exposed to affirmations in 1985 at a weekend retreat. The speaker, Dr. Robert Henry, shared a set of affirmation principles he had learned from Lou Tice's internationally acclaimed program, *Investment in Excellence*® (for more information, see www.pac-inst.com).

Dr. Henry gave us instructions for crafting positive statements of fact that were to be repeated in the morning upon arising and in the moments just prior to going to sleep. These statements were to embody some change we wanted in our lives. As we mentally repeated the affirmations, we were encouraged to imagine in our mind's eye how the world would look from our eyes if the change we wanted had already happened. We were told to hold in our mind, at the same time, a positive emotion we could recall from some earlier event in our lives. We were counseled to continue the twice-a-day affirmation process, holding the image in mind and re-experiencing the positive emotion, until the change we wanted to achieve was realized.

I must confess that my educational background, steeped in physics and the sciences of mechanical and electrical engineering, made me skeptical. Quite simply, I was doubtful about the affirmation process and its alleged benefits. At the same time, I was quite impressed with Dr. Henry's sincerity and conviction that it worked. However, I left the weekend with no intention of actually using affirmations.

Skepticism Meets a Need

In the spring of that year, I was beginning to take out my warm-weather wardrobe. Every spring, I wondered if last year's clothes would still fit. In the 15 preceding years, my weight had stayed around 230 pounds. I yearned for the days when I was a junior in college, on the wrestling team, weighing in at 180 pounds. I had long since given up hope that I would ever see that weight again. As I peered into my closet, I remember a fleeting thought, "Why not try that affirmation stuff and see what happens?"

I crafted a set of affirmations following the recommended model and did as Dr. Henry had suggested. In the first few weeks, I did not even tell my wife that I was doing something as unscientific as repeating affirmations morning and night hoping that I would magically lose weight.

Miracle of miracles, at the end of 10 months, I had lost 50 pounds and weighed 180 pounds. When people asked me how I did it, I never admitted the role affirmations played. I would simply respond, "I ate less and exercised more." The statement was true, but I did not know why I was eating less and exercising more.

Upon reflection, I recall that during that period I found myself impatient with the elevator service in the building where I worked and would spontaneously sprint up the flights of stairs rather than wait for the elevator. In trips to the mall, I found myself parking in the first open spot that I came upon rather than looking for a spot closer to the shops. For reasons unexplained, when helping with the family's weekly grocery shopping, I began to forget to buy ice cream, a purchase I had routinely made in the past.

But how do affirmations work?

Developing Neural Circuits Through Imagination

It has long been believed that anything a person vividly imagines produces changes in the brain as if what was imagined actually happened. Proof of the increased proficiency brought about by imagination and visualization has been demonstrated in many settings.

In 1969, in his book *Mental Imagery* (Springer Publishing Co., Inc., out of print), Alan Richardson reported on an experiment that improved success in shooting free throws. One group was instructed to imagine a ball between their hands, then visualize delivering it on a trajectory that arced perfectly and swooshed through the hoop without touching the rim. The other group actually practiced shooting free throws every day on the court. At the end of six weeks, the results were that those who visualized shooting free throws improved by 23 percent, while those who actually practiced on the court netted only one percentage point better, at 24 percent.

The benefits of visualization have been acknowledged by coaches of every sport. It has also been known to backfire! When the kicker on a football team missed the extra point for the third time, he was sent to the locker room and told to think about what he'd been doing wrong. Do you think the next kick after he returned to the field was successful?

In 1993, the scientific community reported that, by utilizing positron emission tomography, they were able to record evidence of neurons sprouting and interconnecting to form neural circuits in response to repeated mental activity. That same year, Dr. Alvaro Pascual-Leone reported on what he termed a key experiment. He taught healthy adult volunteers a five-finger piano exercise, up and down the scales, and charted the resulting brain changes. He reported that, after five days:

> There were tremendous changes in the size—very dramatic changes—in the brain's representation of hand muscles in the subjects who learned the piano exercise. They more than tripled the size of their brains' motor maps. And these changes paralleled their improvement in performance.

As the first volunteer group practiced, neural circuits were established that resulted in electrical signals being delivered to the muscles in their arms, hands, and fingers. Once an initial set of circuits had been formed in the brain, these neural circuits grew in size and became stronger. The stronger and larger they became, the easier it was for participants to initiate free-flowing hand and finger movements.

In this experiment, there was also a second volunteer group. These people were instructed to simply sit at the piano keyboard and randomly strike the keys in any way they wanted. At the end of five days of practice, there were no discernable changes in the neural circuits in the motor cortexes of this group.

But the biggest surprise came from volunteers in a third group, who were taught the piano exercises but were only allowed to rehearse them mentally, while looking at a keyboard. After five days, the brains of these people were identical to those who had manually practiced. This research provides clear and convincing scientific evidence that people may create neural circuits of their own choosing by use of visualization techniques.

Why Do Affirmations Work?

I was delighted to find a scientific explanation for why affirmations work. Dr. Pascual-Leone had discovered that the same brain cell networks involved in executing a task are also involved in imagining it. This means that anyone can establish in their subconscious system a neural circuit of what they have visualized. Repeated visualizations of the same image will make the neural circuit stronger and larger over time. It suddenly dawned on me that once the visualized neural circuit is in place, the introduction of a thought, belief, or perception that in any way conflicts with the visualized image will unbalance the system and evoke feelings of mental discomfort.

Within the vast circuits of the subconscious system, there are neural circuits whose job it is to bring behaviors into play that keep the mind/brain/body system in a state of equilibrium. This state of equilibrium is present when the actual perceived image matches the visualized image. The selection of the behaviors that bring about this state of equilibrium may be thought of as the inherent genius of the subconscious.

This understanding may well help us appreciate why the affirmation process I embarked upon worked without my having any conscious awareness of why I was losing weight. Like most Americans, I have been bombarded with information that repeatedly advises me that, to lose weight, I need to reduce my calorie intake and/or increase my calorie burn rate by exercise. Upon reflection, it comes as no surprise that my

subconscious brought into play the behaviors that led me to sprint up flights of stairs rather than taking the elevator, park some distance from mall stores, and forget to buy ice cream.

All of this is good news! It means that by visualizing something repeatedly, we stimulate our subconscious to search for neural circuits that will evoke behaviors to bring about the very thing we have visualized.

Creating Affirmations That Work

Positive results from practicing affirmations come from our natural urge to reduce the cognitive dissonance that is created when we compare current reality with the future state we want to achieve. Here are three steps for creating powerful affirmations to produce a desired change in yourself (see "Affirmation-Visualization Process"):

Step One: Craft an Affirmation

To be highly effective, the words of the affirmation need to follow six basic guidelines:

- Be Personal
- Be Positive
- Use Present Tense
- Express Positive Emotion
- Be Realistic
- Be Specific

Let's investigate what is meant by each of the six.

• ***Be Personal.*** Sometimes you may have a strong urge to write an affirmation about changing someone else. However, the only person you can change is yourself. So write your affirmation using words like "I am" and "me." Your conscious mind creates a new neural circuit. This new circuit will then become part of your subconscious mind.

• ***Be Positive.*** Instead of "I do not like being overweight," try "I have a trim, fit body." The neurobiological purpose of writing an affirmation is to generate an image in the brain of how the world will look after your desired change. Remember, whenever you hold a mental image, the presence of that image causes a neural circuit to form.

AFFIRMATION-VISUALIZATION PROCESS

The three-step affirmation-visualization process that will drive new neural circuit development is:

- Craft an affirmation that you will repeat mentally.
- Visualize an image of the way the world will look as viewed from your own eyes when that affirmed fact is a reality.
- Recall simultaneously an event that triggered positive emotions in order to chemically tag the new neural circuit formed by the affirmation and the visualized image.

The affirmation-visualization process has enormous power. Some of the results you can expect to get by using it include:

- Secure the quality of life you want by activating existing neural circuits to change your behavior and relationships with others.
- Neutralize unwanted emotions, eliminate limiting attitudes and beliefs.
- Condition your brain to detect information in your environment that is of special importance to you.
- Solve problems by utilizing subconscious processes.

If the neural circuit includes the idea, "I can't do something," then the only behavior that can flow from it is one that will ensure that the "something" does not happen. If we repeatedly tell ourselves that we are bad at remembering names, neural circuits form in response to these thoughts, which perpetuate the problem. The statement "I am bad at remembering names" is an affirmation. An affirmation is a statement of fact. In other words, when you affirm anything, you are declaring that the statement is true.

• ***Use Present Tense.*** Make the affirmation in the present tense, as if the stated fact is already true. For example, "I am healthy." If you use such terms as "I will" or "I can," nothing will change in the present, because these are words referring to your potential and the future.

For example, "I can be rich." True, anyone can be rich, but most are not. Stated in the present tense, the affirmation is, "I am rich because I own my own home and can easily finance my children's education." The objective of the affirmation is to create neural circuits in the brain, just as if the circuits were forming in response to experiencing current reality.

• ***Express Positive Emotion.*** Include an emotionally positive word in the affirmation you write:

- "I am *ecstatic* now that I am fit and trim and weigh 180 pounds."
- "I feel *energized* now that my basement is organized."
- "I am *content* in my marriage now that we talk about our relationship every day."

The emotionally positive word helps tap into the reservoir of emotionally positive experiences stored in your brain and conditions the limbic system to expect more positive experiences.

• ***Be Realistic.*** The affirmation can represent a stretch for you, but it needs to be realistic. Successful practitioners of affirmations strongly suggest that, for neurobiological reasons not fully understood, affirmations such as "I am a millionaire" do not change behavior. The problem may be the inability of the individual to visualize his or her life in vivid detail, as if he were already a millionaire. This prevents the unrealistic affirmation from producing the desired change.

• ***Be Specific or Exact.*** Use words that are detailed and precise in creating the affirmation. Don't write, "I am happy now that I make more money." For example, if you are earning $2,000 a month in sales and you realistically believe that since other people in sales

are earning $3,000 a month, you could also earn that amount, your affirmation might read: "I am happy now that I make $3,000 a month," while you visualize a bigger paycheck in an amount that represents a $1,000 increase.

Step Two: Visualize

The second step in the affirmation-visualization process is to create a mental image of the way the world will look out of your eyes when the change you seek has happened. It has been my experience in working with thousands of people that the visualization step requires the most mental effort. A common mistake is to establish a mental image that would result from a video camera focused on you if the change were realized. In my weight-loss example, this would mean I imagined myself in a movie, striding along at a svelte 180 pounds. The problem is that this is not the image I would see out of my eyes if I weighed 180 pounds. That video image is what someone else would see.

Some have asked me if it would be suitable in this visualization process to simply look at a picture of myself when I weighed 180 pounds. The answer is "no" for a number of reasons. First, the image in the photo is a picture of me in the past. Second, a picture of myself weighing 180 is not what I would see out of my own eyes when I again weighed 180 pounds.

The image that I have found most useful to employ in using the affirmation-visualization process for weight loss is the image of the dial on my bathroom scale, which will show 180 pounds when I stand on the scale and look down.

Step Three: Tag with Emotion

A third step in the process involves chemically tagging the circuit that is forming as a result of the visualized image. Let yourself feel the positive emotion you will experience once the visualized image is realized or find an experience in your past associated with a positive emotion, so you can piggyback on the chemical traces it caused. It might be the day you graduated from school, the moment you learned of a promotion, the day you had a baby, or a time someone you care for accomplished something major and you felt proud. It doesn't matter whether it is recent or from years ago. What matters is that when you think of it, you experience or re-experience that little lift. We will use this emotional memory to strengthen the affirmation.

The remembered emotion need not have anything to do with the change in behavior you are currently seeking in your life. Whenever you experience a positive emotion, or vividly recall a positive experience and feel your emotions lift in response, the limbic system in the base of the brain is releasing chemicals that cause this effect. At the moment the positive emotion chemicals are released, neural circuits that include traces of these chemicals form to record the information. These new circuits are said to be "tagged." These tagged circuits and the information they contain are then readily available to affect your conscious behavior. *This is an important step often omitted when talking about affirmations.*

A Family of Affirmations

You will find it useful to craft several affirmations, representing different areas of your life, to keep your life in balance. If you're strongly focused on a work-related affirmation, create one related to your personal life at the same time. It would hardly be progress to become so focused on improving one area of your life that the rest suffered. Focus on only one or two affirmations initially, then, in order to keep balance in your life, focus on one in each area, repeating and visualizing morning and night, while the new neural circuits form and your life moves in the directions you've pictured.

The affirmation-visualization process has enormous power. Some of the results you can expect to get by using it include:

- Secure the quality of life you want by activating existing neural circuits to change your behavior and relationships with others.
- Neutralize unwanted emotions, eliminate limiting attitudes and beliefs.
- Condition your brain to detect information in your environment that is of special importance to you.
- Solve problems by utilizing subconscious processes. ◘

Hal Williamson is a nationally known speaker and creator of the celebrated "Pathways to Greatness" seminar series. As a master storyteller, he has a talent for making complex material understandable. Hal is also a mechanical engineer, intellectual property attorney, and MBA who worked as a patent attorney for 40 years.

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This article is adapted with permission from chapters 14-16 of Liberating Greatness: The Whole Brain Guide to an Extraordinary Life *(Word Association Publishers, 2006). For more information or to purchase this title, go to www.pegasuscom.com and using the search feature in the lefthand column.*

SHARE YOUR EXPERIENCE

Do you have experience—positive or negative—with using affirmations? If so, send your comments to editorial@pegasuscom.com. We'd like to share different outcomes with this process in a future issue. If you prefer, we can keep your comments anonymous.

NEXT STEPS

The next time you have a problem to solve in your organization, try these steps:

1. Define the problem as simply as possible.
2. Create and begin to repeat an affirmation of how the world will look once the problem is solved. When appropriate, make the affirmation time-specific. It can be a stretch but not impossible.
3. Ask your subconscious, "How do I solve (the problem) . . . ?"
4. Repeatedly deliver the problem to your subconscious just before you fall asleep and just on waking.

—Hal Williamson and Sharon Eakes

