

Israel News

## How a Small Step Out of Your Comfort Zone Can Trigger Growth and Creativity

In the brain and in everyday life, our behavior is channeled and limited by what we learned in the past. A little awareness can generate a big change



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It's said that well-behaved women don't make history. The same goes with men. Our barrier for change is what is easy and what is acceptable. Those two blocks prevent most of us from spreading our wings, and guarantee that we will be regimented and not deviate from the ranks. That is true of our everyday life, and as is becoming increasingly clear from our growing understanding of how the brain works, it's true for our inner lives as well.

Let's start with the "easy." Routine, habits and the pursuit of the familiar all enable us to save energy and to enjoy comfort and a sense of security. But tendencies like these also entrench us, suppress growth and prevent us from exploring the world. In the brain, too, the first barrier to non-routine thinking is the relative ease with which activity progresses along familiar, well-trodden paths, as compared with progress on new paths. If as children we learn that a chair typically appears next to a table, the cortical representations of both a chair and of a table are linked in a certain sense, and that link continues to be strengthened as we go on seeing chairs next to tables. This is the famous neuroplasticity that underlies our ability to learn and to remember both new things and things that are recurring, and which exists also at advanced ages. As a result, when we

see a chair, we immediately think of a table and activate its cortical representation – even if not necessarily consciously and even if there is no table in sight.

Associations of this kind are highly advantageous in our interactions with the world. Based on past experience, we anticipate and deploy with surprising precision for what is around us and for what will appear in the future. To think about the oak tree from which the chair was made, and not automatically about the table, requires an effort, because it's a departure from the natural structure of memory, which is constructed on the basis of the frequency with which things appear together in everyday contexts.

Similarly, we have whole scenarios stored in the memory, which are stronger and more automatic, the more typical they are. As Israelis, when we are invited to breakfast, it's easier for us to imagine and expect an omelet and a vegetable salad than to anticipate sausages (which is probably also why people wince when they see me eat sushi with skhug, a Yemeni hot sauce). The scenarios we have experienced and filed away, and the habits that they gave rise to on the basis of past experience, guide our future behavior. That's why it's easier and more natural for us to commute to work by the same route every morning, to buy vegetables from the same greengrocer and to hang out with people who think like we do.

The “acceptable” is the second barrier that stops us from initiating revolutions both major and minor. Rules, orders and conventions play an important role in preserving order and security, and in social functioning. Without them, we would not survive. That's why displaying doubt about rules and conventions, or deviating from them, will usually expose us to punishment, denunciation or at least a quizzical look. But such aberrant behavior also has an important role,

perhaps even more interesting: If we don't ever deviate from the rules or challenge the norms, we won't invent surprising things or create special works. Without deviating, we will not be open to moving in new directions and we will not blossom in a way that will bring to expression the potential hidden in all of us.

As in human society, in the human brain, there are also acceptable and anomalous thought patterns, and each has an important role. Indeed, beyond the fact that frequency and typicality channel us into familiar paths and behaviors, both in the brain and in our surroundings, the second dominant element that restrains our possible breaching of boundaries is a system of laws and dictates.

A constant struggle is going on in our brain between two potent and contradictory forces. One is excitation, the other is inhibition – something like the gas and the brakes in a car. Excitation activates representations, associations, thoughts and actions; while inhibition constrains and suppresses the activation of less relevant representations, distracting thoughts and involuntary or unacceptable actions. When we're standing on the old city wall in Acre and we want to jump into the sea, but are also afraid to do so, that is exactly the war between excitation and inhibition. When your interlocutor's mouth is giving off an unpleasant odor, your excitation encourages you to point it out to him, but assuming you have a healthy level of inhibition, that impulse will die and you will restrain yourself from saying anything.

Individuals can differ in their levels of inhibition. People with attention disorders, as well as children in general, are more impulsive and can say things that others would not say, or do things that others would not dare to do. Within the setting of a laboratory, a simple task called an "anti-saccade" exemplifies the power of inhibition. In this task, a

flash in the corner of the visual field naturally attracts attention, but the subject is required to resist the urge to move her eyes toward this flash and to move her eyes instead in the opposite direction. This turns out to be very difficult for people with inhibition deficiency, though not only for them. Give it a try.

The prefrontal cortex is akin to the brain's CEO, deciding and using excitation and inhibition to push toward what is desirable, based on its forecasts of possible consequences and results. It is late to develop, arriving at maturity only when we are in our mid-20s, partly because its development is based on accumulated experiences that gradually teach us the difference between good and bad and between right and wrong. It is the censor, the boss in the room; it sets the rules.

These two principles, attraction to the familiar and inhibition, are not independent. Both are based on the statistics of the world around us. The familiar is the typical, which in the nature of things occurs more frequently in everyday contexts and therefore directly influences our expectations from the surroundings. A refrigerator will appear in the kitchen with high probability, but a shoe will appear there with relatively low probability, while a samurai sword will appear in a kitchen with near-zero probability. In the same manner, we will know that the dish we like to order in a particular restaurant will generally taste the same each time.

Our skill and tendency to collect and remember the statistics of what happens around us is the basis for critical abilities such as learning a language, or other attributes of the world, such as that children learn to expect that a car will necessarily have wheels but that it will not necessarily be red.

Similarly, inhibition is also based on probabilities. It ensures that we will go with what is regularly dictated to us and with what is acceptable. Because what is acceptable is what occurs more frequently – for example, what’s in fashion, the use of contemporary slang or trendy vacation spots – and inhibition sees to it that we do not deviate from the mainstream.

Accordingly, both in the brain and in society, behavior is channeled and limited by what has been learned in the past, and by what is dictated as being acceptable and conventional. Both of these elements are the principal enemies of creative thinking, unique behavior and individualism, of everything that can be considered as being revolutionary to a degree. Galileo and Einstein, Gorbachev and Sadat, Van Gogh and Madonna – none of them would have changed our world if they had acted only according to the acceptable.

But it is worth overcoming what society and our brains dictate, not only in the context of major revolutions. Starting a trend of wearing sandals with socks, selling spaghetti in a pita or coming to class with a radical haircut are all moves that require cognitive and emotional energy, which must stand firm against the voices of inhibition that are broadcast to us constantly from inside and out. After all, it’s known that it’s easier to follow than to lead, and this extra effort is one of the main reasons why.

One of the best pieces of advice I can give for a successful brainstorming session, when creative ideas are called for, is to remove the manager from the room. This can lower inhibitions. There is no bad idea, there is no dumb idea, there is no idea that we already know won’t work – that has to be the atmosphere during the creation of ideas, or

otherwise thinking is paralyzed by external inhibition that develops into internal inhibition as well.

This is also how creativity works in the brain. The creative process can be thought of like a rhombus – a diamond shape. In the first stage, the bottom half of the diamond, we generate ideas openly and freely, through what is known as divergent thinking. Afterward, in the stage of convergent thinking, all the ideas that were raised are evaluated and compared, and the best idea is chosen. Boldness, both conceptual and behavioral, requires a reduction of inhibition, which comes with a certain lack of discipline and violation of typical boundaries. Naturally, this is not a recommendation to break laws or endanger life. Going through a red light will not enhance creativity.

Following the easy and the familiar is a tendency that occurs in us spontaneously and automatically, and that is both the advantage and the shortcoming of the way we think and act. Listening to dictates, from inside and from outside, is less automatic but influences our conceptual and behavioral paths in a similar way, by inhibiting what is not acceptable and is contrary to those dictates. The easy opens available doors for us, while the acceptable closes doors to nonstandard actions and ideas. That doesn't mean we don't have the freedom to choose, but only that we need to be aware of and interested in exercising it.

A few days ago I went with my little daughter to the library across from our home, to read some poetry together by Nathan Zach. The enchanting silence of libraries, the white walls and the orderly shelves seemed to offer a perfect opportunity to teach her a lesson about breaching boundaries. Because I'm new to the world of yoga, I told her I needed a little help in doing a headstand – right then and there. The horrified expression that filled her face reinforced

my feeling that the mischievous lesson was also timely. I persisted at length, until she was ready to play along.

I think it was a good lesson. I want each of my children – Naor, Nadia and Nili – to make history one day, or at least be liberated to choose.

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