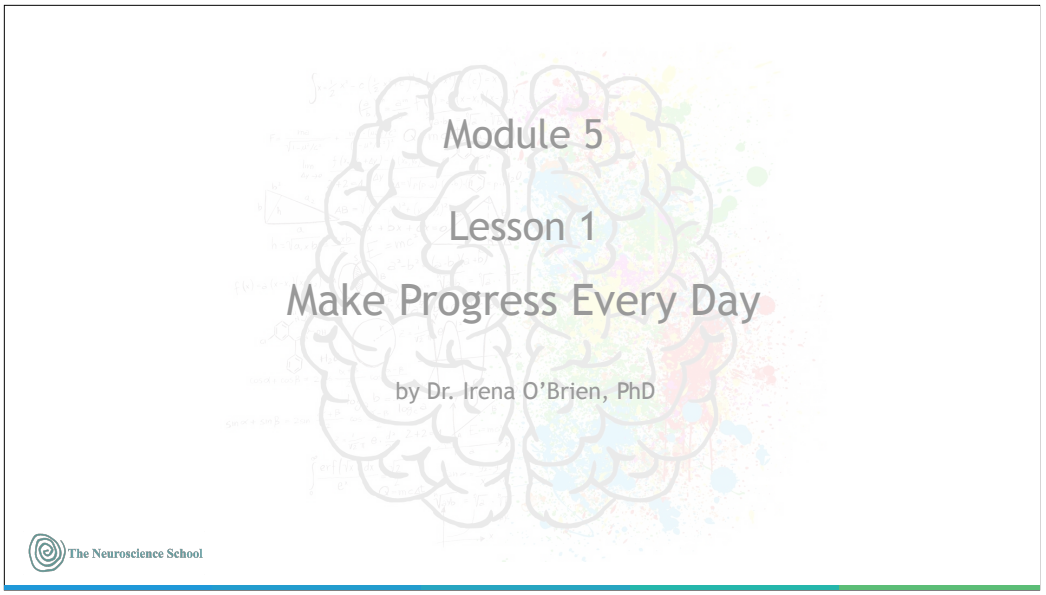
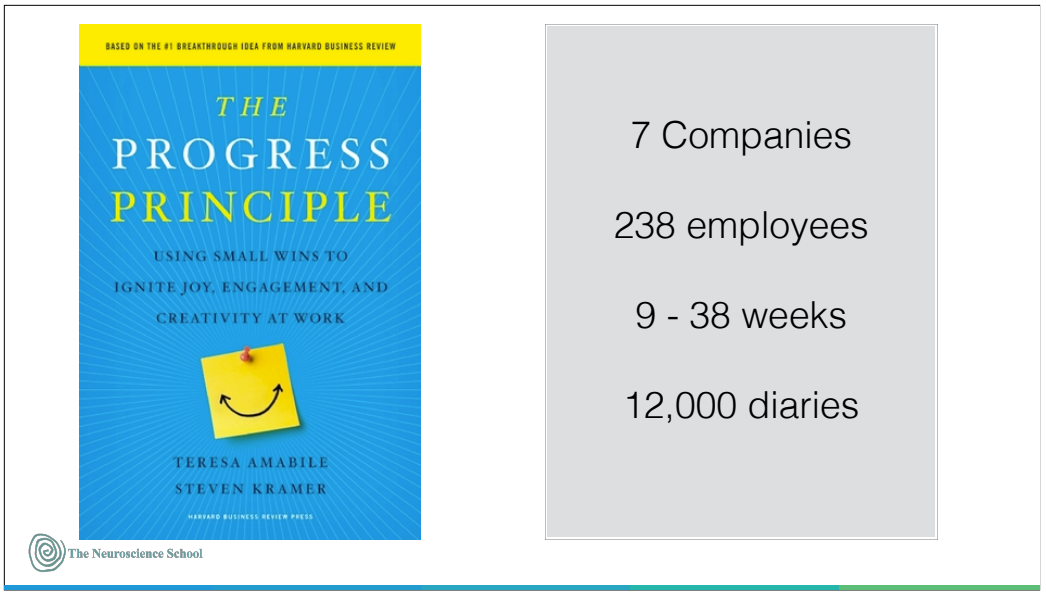
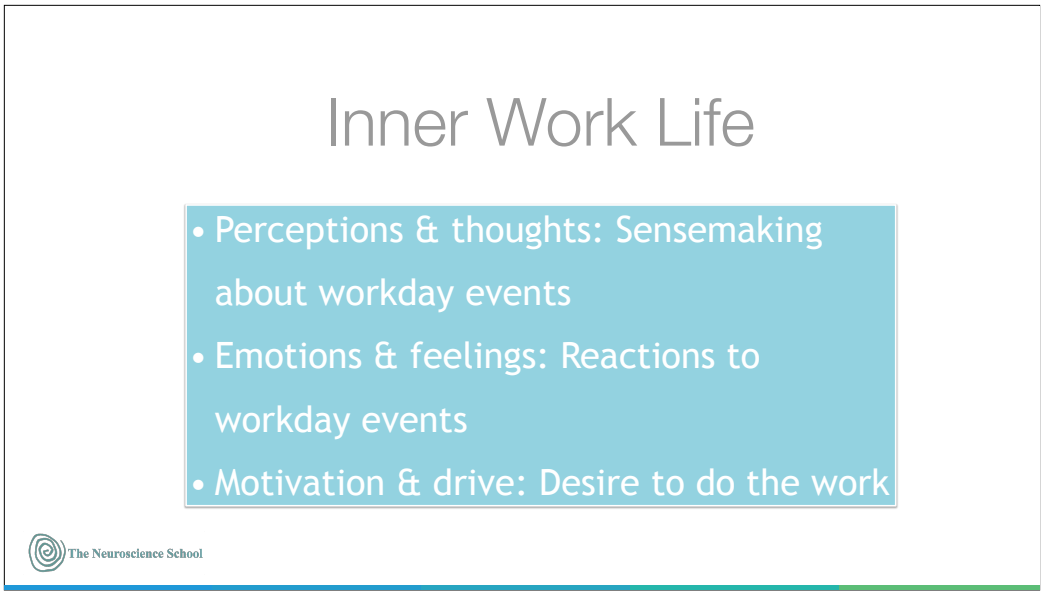


Welcome to Module 5 on Making Progress Every Day.



I want to tell you about how small progress can lead to big wins. Teresa Amabile and Steven Kramer studied 7 companies, both new and old, large and small, that consisted 238 employees in 26 teams for between 9 and 38 weeks. The employees were asked to keep a daily diary describing one event from the day that stood out in their minds, regardless of the type of event, as long as it was relevant to the work or project, and they completed a daily questionnaire on that event. The questionnaire asked them about the basics of the work day, their own work and motivation, the team and its work, their perception of the work environment, and their emotions. In total, they collected 11,637 diaries.

They read all of the diaries many times which led to their development of the inner work life system, the ways in which inner work life influences performance, and the progress loop.



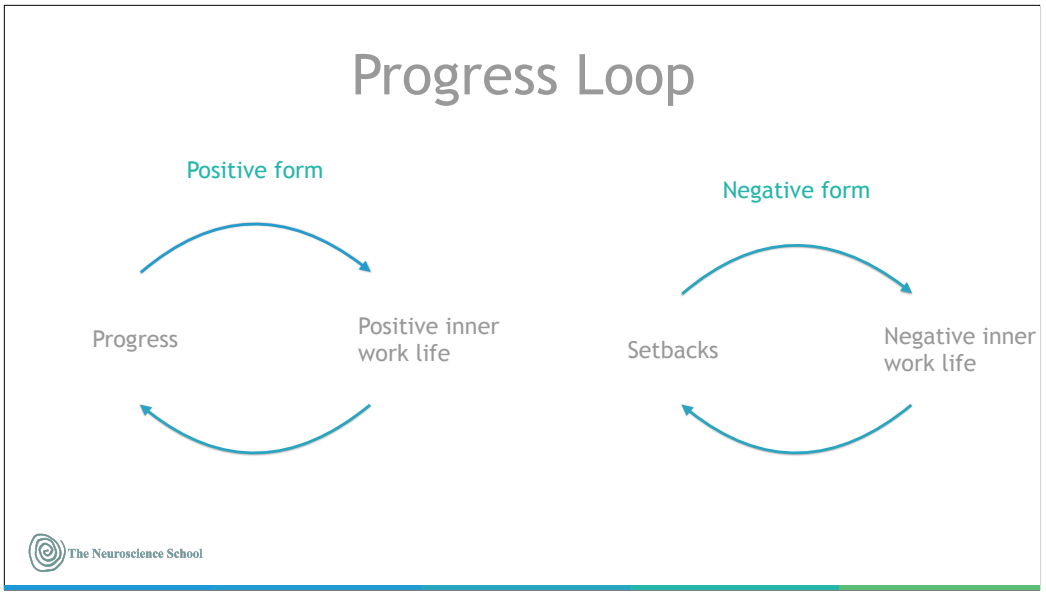
Here is how they defined inner work life. It included:

Perceptions range from immediate impressions to fully developed theories about what is happening and what it means. When something grabs your attention, you start sense making - trying to figure out what it means. Your mind poses a series of questions, especially if what happened was ambiguous or unexpected,; these questions and their answers make up your perceptions. Interestingly, you are usually unaware of this process.

Emotions are both sharply defined and a more general feeling, like good and bad moods. Emotion is the joy you feel when you finally solve a difficult problem; the frustration when your solutions fail; the disappointment when the board rejects your strategic plan, the pride when a fellow manager recognizes your creativity at a company meeting. Emotion is also the overall positive mood you feel when everything seems to be going well on a particular day, or the negative mood when a day starts with a setback and goes downhill from there.

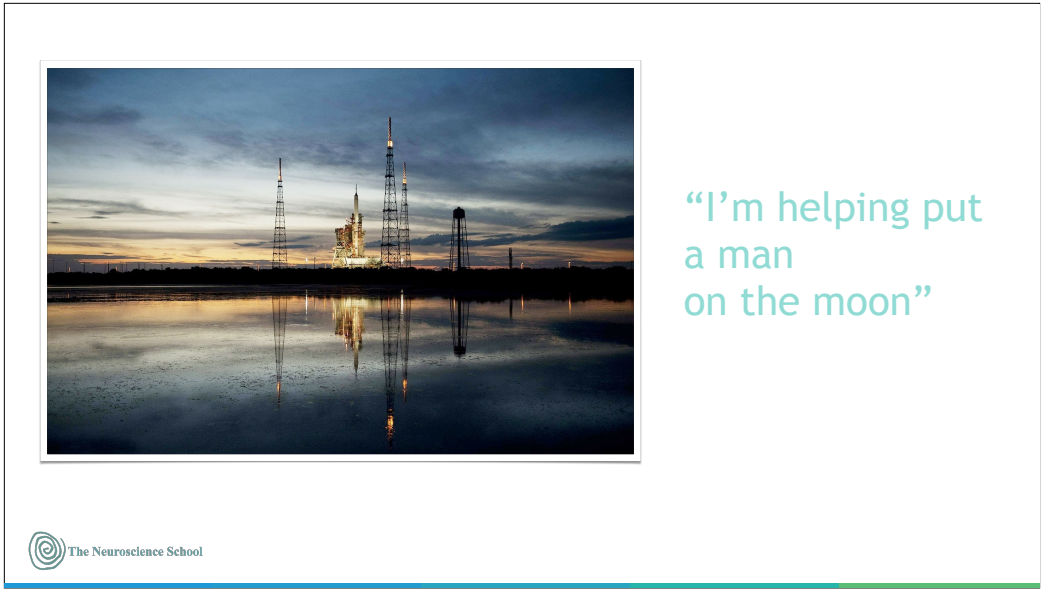
Motivation is a person's grasp of what needs to be done and his or her drive to do it at any given moment.

Inner work life is a system because they all influence each other. So perceptions can influence emotions and motivation just as well as emotions or motivations influence the rest of the system. And the system influences performance. But the primary source of influence is motivation.

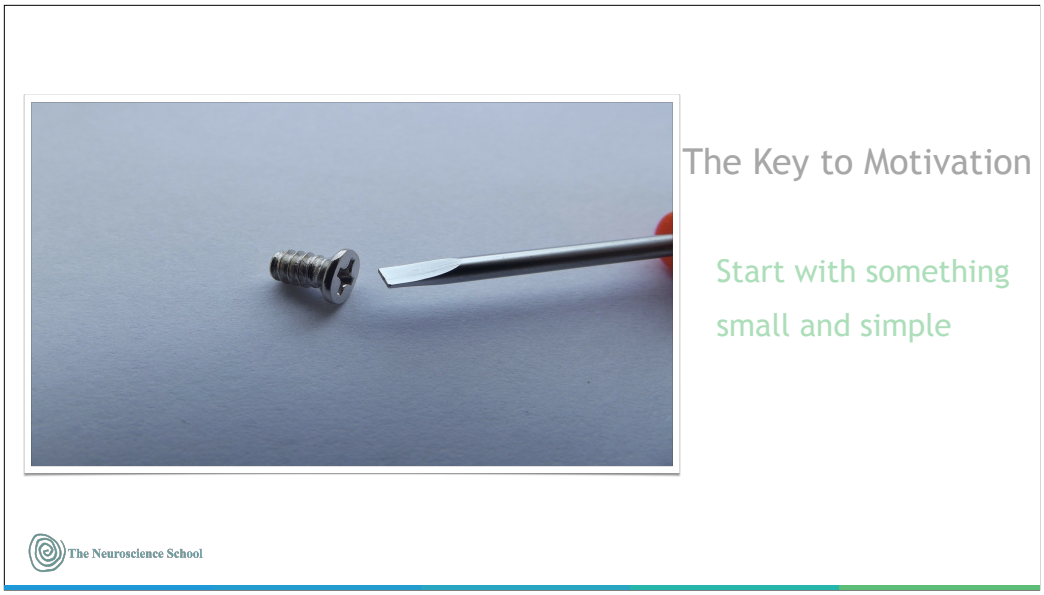


From all of the diary entries, they found that the single best predictor of inner work life was progress in meaningful work, no matter how small. Positive inner work life, and remember that motivation is the biggest influencer, leads to greater creativity and productivity. And making progress (being productive and creative) leads to positive inner work life. This is the progress loop, where progress and inner work life fuel each other in an upward spiral. Of course, setbacks can lead to negative inner work life that can lead to a downward spiral.

But when they asked managers what motivates employees, progress did not come up. In fact, a 2009 McKinsey survey on motivating people at work yielded the same story - progress was completely absent from the results. It's so simple, really: give people a chance to make some progress in meaningful work and you increase their motivation.

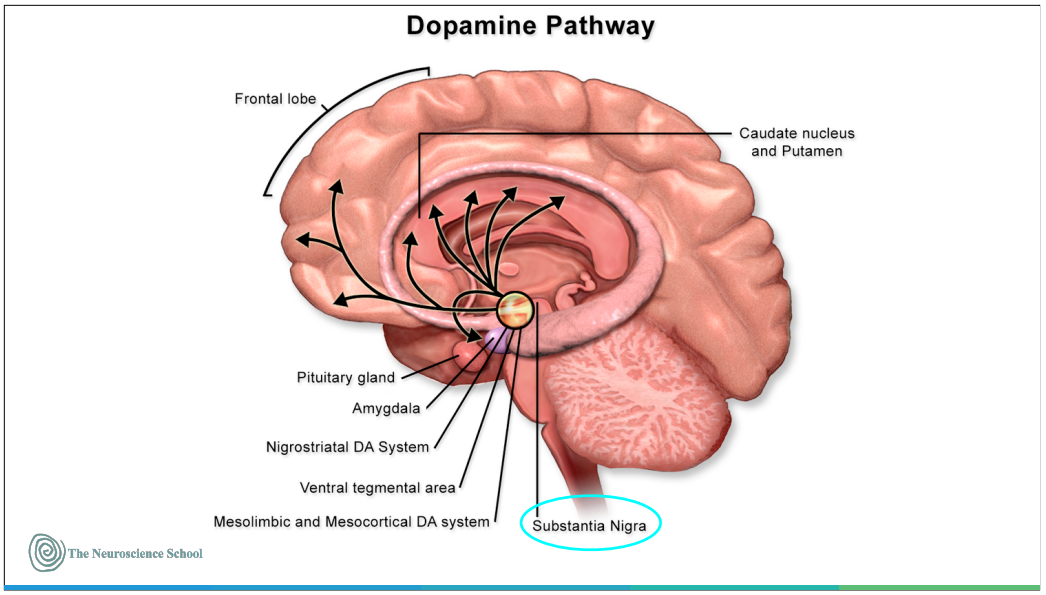


And to be meaningful, your work doesn’t have to have profound importance to society. What matters is whether you perceive your work as contributing value to something or someone who matters (even your team, yourself, or your family). Here’s a story I read in an HBR article not long ago. John F. Kennedy ran into a janitor at NASA in 1962. When the president asked him what he was doing, the man said, “I’m helping put a man on the moon.” This is a really good example of how we can create meaning out of a seemingly meaningless job.



I need to say this again because it's so important: the single best way to increase motivation is to make progress in meaningful work, no matter how small.

What can we learn from this research: to increase our motivation, we only need to start with something small and simple that we can succeed at. This small progress increases motivation, which leads to even more progress in an upward spiral. It really is that simple.



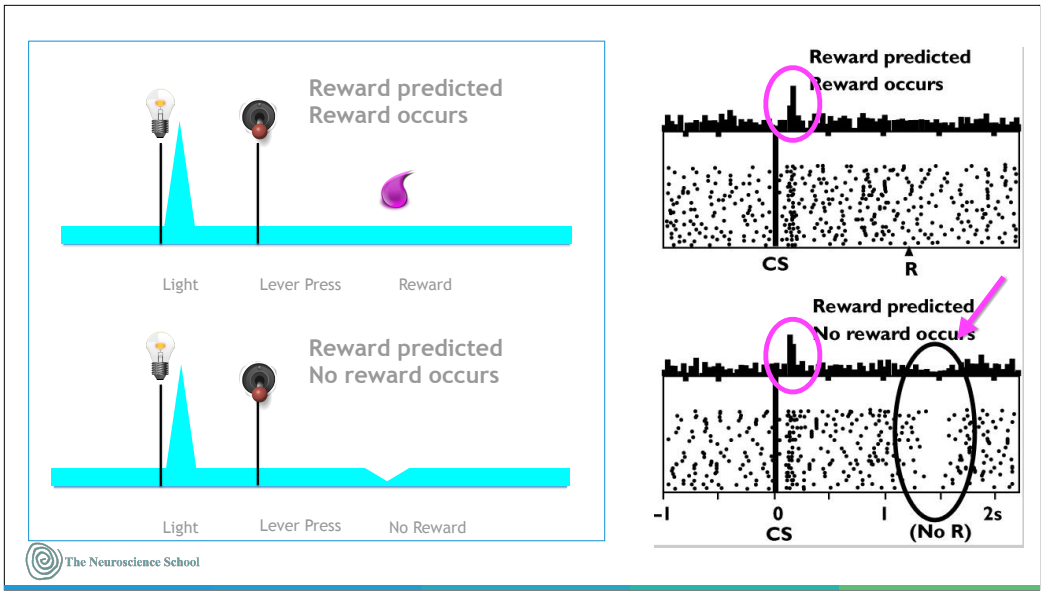
What is the neuroscience behind motivation? We saw in a previous slide how progress increases motivation whereas setbacks decrease it. Progress means that we're moving forward, so inherent in the meaning is step-by step success.

Learning is driven by changes in our expectations about future meaningful events, such as rewards and punishments. This means that we can learn to expect success or failure. We can use predictions to improve the choices we make today. How do we predict future success from the choices we make today?

Success is a reward that we all aspire to. A single-cell study with monkeys shows us how this works. In single cell studies, an electrode is planted into a single neuron of the brain of a monkey which allows the researchers to track the response of that neuron.

It's all about the dopamine. Dopamine is a neurotransmitter that plays a major role in reward-motivated behaviour. In fact, dopamine is so rewarding that rats will continue to press a lever for a shot of dopamine until exhaustion, even forgoing eating and sleeping.

In this study, the electrode was implanted into a dopaminergic neuron of the substantia nigra. . The substantia nigra is part of the basal ganglia, which are a set of midbrain structures that play an important role in goal-directed behaviour and motivation, through the release of dopamine. You can see that it has connections with the prefrontal cortex.

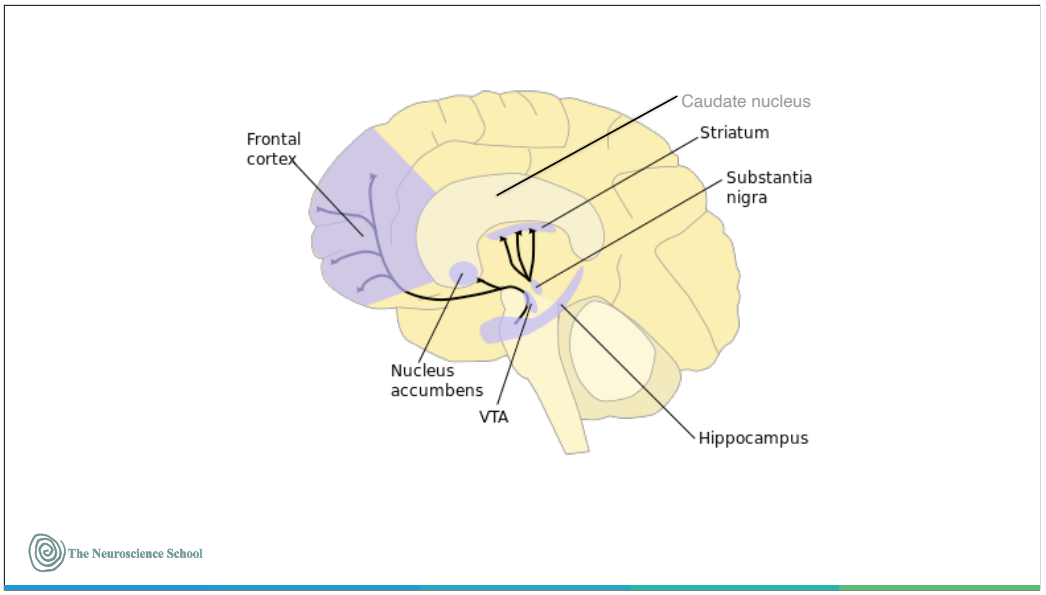


The monkeys were taught that, if they pressed a lever whenever a light was illuminated, they would receive a squirt of juice. In aqua here you see the baseline level of dopamine production . The light goes on which predicts the arrival of the juice and you can see here how dopamine spikes immediately after the light is illuminated, even before they press the lever for the squirt of juice because they have learned to expect the reward. By the time they get the reward, the squirt of juice , dopamine levels have returned to baseline. In the bottom panel, after a long while of getting juice following the light, they expect the juice to arrive. And you can see here that dopamine spiked as expected . But this time, the juice doesn't arrive after the lever press and dopamine falls below baseline .

On the right you can see it in real time. This is a plot of dopamine activity from the single neuron in the monkey substantial nigra. After the light goes on, dopamine activity spikes, even before the juice arrives . When the juice doesn't arrive, dopamine activity falls below baseline .

What do you think would happen to dopamine if the reward continued to fail to arrive? We would no longer expect it to arrive and we would be training ourselves to expect not to get the reward, in other words, we would be expecting failure.

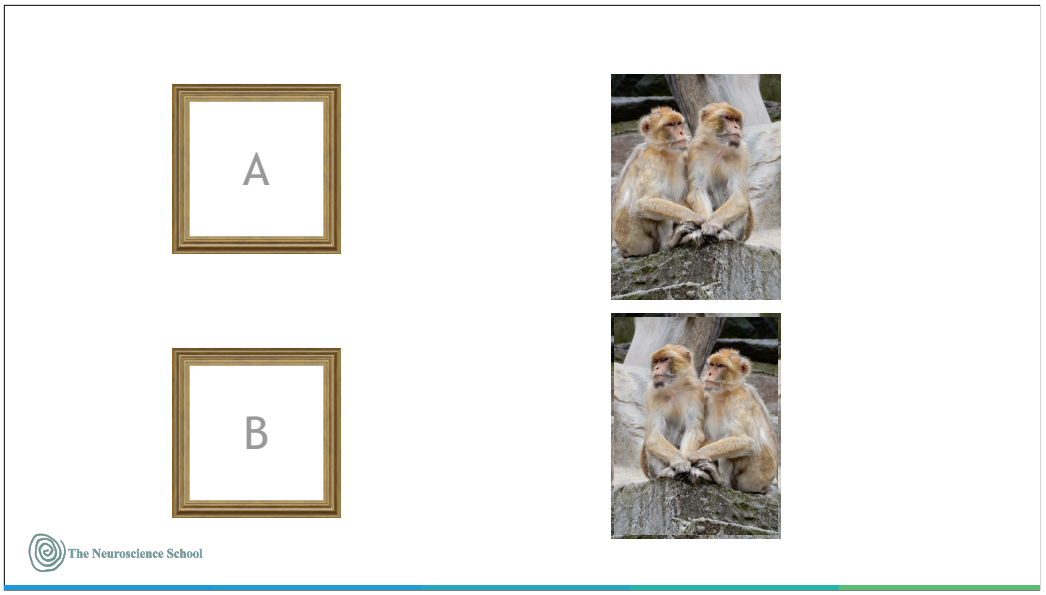
Schultz, W., Dayan, P., & Montague, P. (1997). A neural substrate of prediction and reward. Science (New York, N.Y.), 275(5306), 1593–9.



Another study showed that the activity of dopaminergic neurons in the pfc and the caudate nucleus, another basal ganglia structure, reflect whether the action was a success or failure. And that activity persists for several seconds and influences the actions that come after.

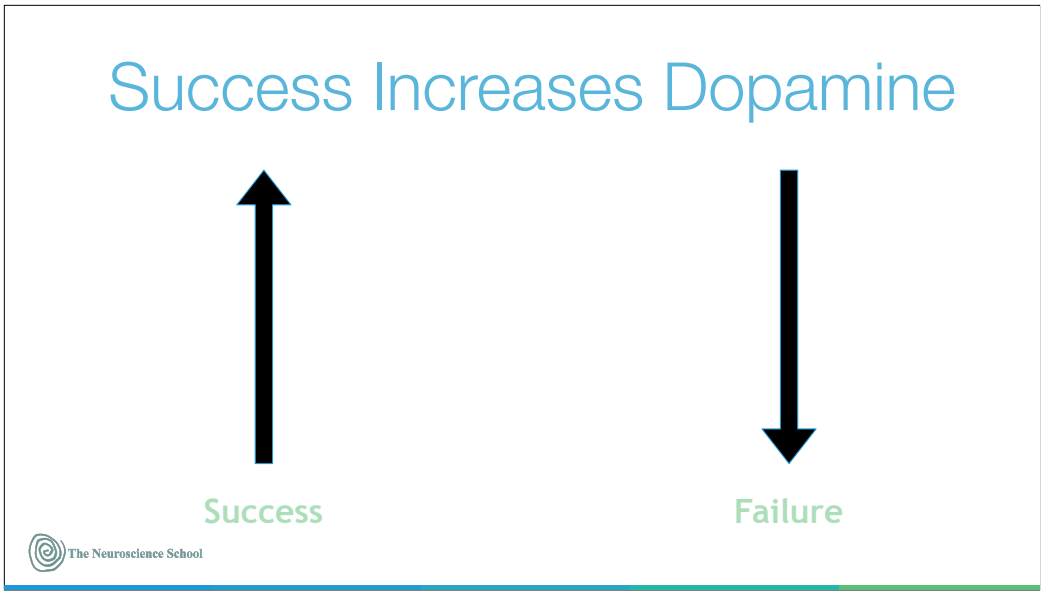
This, again, was a single cell study using monkeys.

Histed, M., Pasupathy, A., and Miller, E. 2009. Learning substrates in the primate prefrontal cortex and striatum: sustained activity related to successful actions. Neuron 63, 2, 244–53.

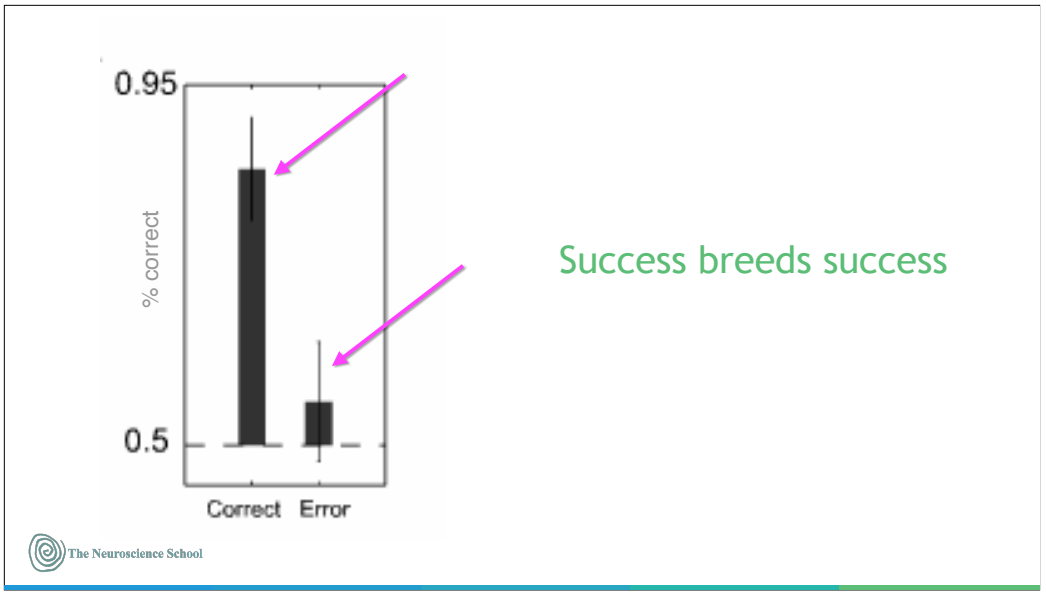


The monkeys were taught to look to the left or right on two different picture cues. For example, if they saw picture A, they looked to the left. If they saw picture B, they looked to the right. They learned this task by trial and error and once they were performing at 90% accuracy, the associations were reversed without any specific cue, so that when they saw picture A, they had to look right and when they saw picture B, they had to look left and they had to learn this new mapping by trial and error. So this task contained both success trials and failure trials, success trails when they looked in the correct direction, and failure trials when the rules were reversed without warning and the direction was no longer correct.

Histed, M., Pasupathy, A., and Miller, E. 2009. Learning substrates in the primate prefrontal cortex and striatum: sustained activity related to successful actions. Neuron 63, 2, 244–53.

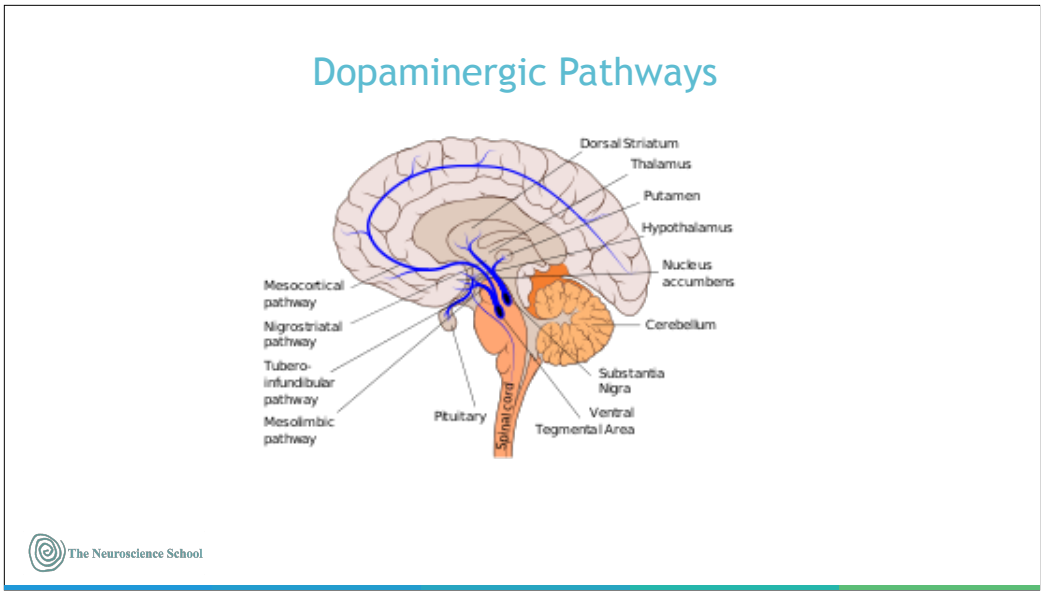


What the researchers found was that neuronal activity increased after successful trials and decreased after failure trials and this activity persisted for several seconds. So when they looked to the correct direction, the activity of the dopaminergic neurons increased . When they looked to the incorrect direction, the activity of the dopaminergic neurons decreased



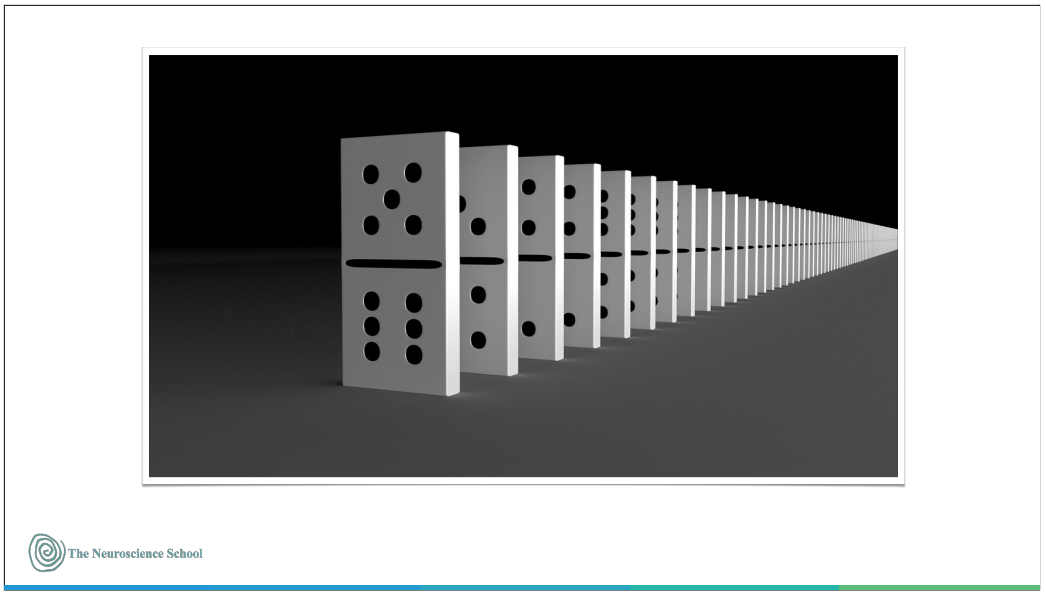
In addition, the previous trial predicted performance on the subsequent trial, so that if the previous trial was successful, the subsequent trial was more likely to be correct. Conversely, if the previous trials was unsuccessful, the subsequent trial was more likely to be unsuccessful. You can see that here, where following a correct trial, the next trial was more likely to be correct, or successful. And where following an error, or failure, trial, the next trial was also more likely to be an error, or failure trial .

The authors note that the long-lasting signals about trial outcome provide a way to link one action to the next and may allow reward signals to be combined over time to implement successful learning. Just as reward signals can be positive, they can also be negative, as we saw above, and we can also learn failure.



We've seen when we expect success, we get a spike in dopamine release. When we expect failure, dopamine falls below baseline. We've also seen that the activity of the dopaminergic neurons code for whether we have experienced success or failure and this activity lasts several seconds until the next trial. We've also seen that when we have experienced success, we are more likely to experience success on the next trial. And conversely, when we have experienced failure, we are more likely to experience failure on the subsequent trial.

How do we maintain our motivation, to continue to expect success: by making sure that we have successes. We do this by breaking down our goals into small enough pieces that we are sure to be successful at each task. For example, preparing a module for this programme was a lot of work and sometimes I felt discouraged at the thought of starting. But, if I set myself a goal to just start on a small piece of it, and not necessarily from the beginning, but from something I knew I could do, my motivation increased and I was often set for the day. It doesn't matter how small the pieces are: we just want to make sure that we are successful at the piece we choose. Because we've seen how success breeds success, and failure breeds failure.



What does this mean? To sustain motivation, break down your day into a series of small enough tasks that you know you can succeed at. This will maintain your dopamine levels, and your motivation, throughout the day.

I used to wake up with a feeling of despair. This is an after-effect of a childhood trauma. Before I learned of the progress loop, my sense of despair felt like an impossible hurdle and, some days, it could take me hours to get going, or not get going at all. The advice we often hear is to do the most important thing first. Well, for me, it felt like climbing Mount Everest.

Now, I make sure I start my day with a small task that I know I can succeed at. It might be preparing just one slide, or writing an easy paragraph of an article. And it's been like a miracle. I find that success on the first task of the day often sets me up for a productive day.

How small should the tasks be? That's a personal matter. Some people can deal well with larger tasks, and others need to break them down further. A series of smaller tasks can lead to just as much productivity as a few larger tasks. We just want to make sure that we are successful on the tasks we choose. Because we've seen how success breeds success, and failure breeds failure.

What can you do if you do fail to avoid a negative spiral? You can change your definition of success.

A client I worked with had to make cold calls for his business. I don't know about you, but for me cold calls are scary and I won't do them. But he had to. He had set his goal at 10 cold calls a day and he defined success as getting an appointment. Industry statistics show that the success rate for getting an appointment is only between 1 and 3%, which means he would have had to make between 33 and 100 calls to get even one appointment! If he were lucky and he made 10 calls every day, he might get one appointment a week.

To make matters worse, he hated making cold calls. In fact, he was a shy introvert so even picking up the phone wasn't easy for him. And he often did not make his 10 calls.

So we first re-defined success: From now on, success would mean just making initial contact. For someone who hates making the calls, this is true success. We then lowered his daily call commitment to 3. His business offered tutoring services and his calls were to school principals and guidance counsellors, so 3 calls a day was realistic number. He was free to make more calls, but once he made his 3 calls, he wasn't required to make anymore. Changing his definition of success and reducing his call commitment meant that he was no longer hampered by strict, unattainable goals. This was life changing for him. He became calmer when making calls and even became better at it. His confidence increased and today, he owns two locations. Just by changing his definition of success.