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5

Building New Happy Circuits

Investing in New Infrastructure

If you were planning a trip to the Amazon, you'd have to choose between cool places that are far from paved roads and destinations that are reasonably accessible. The exotic locales would entice you, but when you saw what it took to get there, you might gravitate toward the beaten path.

It's the same way with your jungle of neurons. You'd love to try out new trails, but when you see how hard it is to slash through one step at a time, you opt for the well-paved neural highways. ↳ *trail-blaze*

You can pave a new road in your brain in 45 days if you repeat a new behavior every day. You must do it each day without fail so the trail gets established. Otherwise, the undergrowth will grow back and the trail you worked so hard to blaze will disappear. You'd be starting from scratch the next time. But if you spark the trail daily whether you feel like it or not, in 45 days it will feel natural. It may not produce the highs of your old happy habit, but you will free yourself of the lows that habit caused. You will be so pleased with your new highway that you will want to build another, and another.

Here are some suggestions for building new roads to dopamine happiness, endorphin happiness, oxytocin happiness, and serotonin happiness. Following that are road-building strategies for any happy chemical. You will decide which new circuits are right for you, and then build your new roads until they conduct as much traffic as your old ones.

Repeating something that doesn't feel good may be taxing at first. Nibbling on carrot sticks doesn't feel as good as licking ice cream, and it's hard to believe that would change in 45 days. Doing homework doesn't feel as good as watching a movie, and you don't see how can repetition make it any different. If you stick to your plan anyway, carrot sticks and studying will soon be connected to your happy chemicals. You will soon feel good when you do what's good for you.

I stumbled on the power of repetition when I noticed that certain music made me happy. I don't mean music that I actually like. I don't mean music that reminds me of a day at the beach. I mean music that I was exposed to by accident when I was young. Music chosen by my brother, my father, my boss at work, and the cafeteria I ate in were always there in the background. When I hear these songs today, I feel strangely happy, whether or not I liked them at the time.

This mystified me until I read a book called *Flow*, by Csikszentmihalyi. It explained that music gives pleasure because your mind keeps predicting what comes next. Each correct prediction triggers dopamine. Unfamiliar music doesn't trigger dopamine because you don't make good predictions. But music that's too familiar doesn't trigger it either, because you can make the predictions automatically without investing attention. Music makes you happy at the sweet spot in the middle. So any music that makes you happy today will eventually make you less happy because it will become too familiar. If you want to be happy with your music all the time, start exposing yourself to unfamiliar music now, so it will be in the sweet spot by the time you've worn out the old pleasures. 

This was a revelation to me. It seemed to explain why happiness is elusive despite our best efforts. And it showed how the counter-intuitive choice to repeat things we don't already enjoy can bring great rewards.

People usually talk about "good music" and "bad music," as if the quality is inherent in the music. We look for good movies and good books, and try to avoid bad ones. But the pleasure we get from these things is shaped by accidents of experience more than we know. You can increase your pleasure if you're willing to do things that don't feel good at first.

No one wants to listen to music they don't like on the assumption that they'll grow to like it. No one wants to befriend a person they don't like or join an activity they're bad at, on the assumption that it will feel good later on. When something feels bad, your brain trusts its own

reaction. But you miss out on a universe of potential happiness when you do that.

Your brain treats things you like as if they're special and things you don't like as somehow lacking. You presume there's a good reason for this. When you know that your pathways came from accidents of experience, it's easier to build new ones. And when resisting old paths leaves you feeling like your survival is threatened, it's good to know that feeling is also an accident of experience. With persistence, you can wire yourself to feel good when you do things that are good for you.

Building New Dopamine Circuits

Tell yourself "I did it"

Do a victory dance every day. You score at least one goal each day, so commit to finding it and enjoying it for a moment. You will not conduct a symphony at Carnegie Hall every day. You will not lead starving hordes into the Promised Land every day. Adjust your expectations so you can be pleased with something you actually do. This doesn't mean you are setting your sites low. It doesn't mean you are "full of yourself" or losing touch with reality. It means you linger on your gains the way you already linger on your losses.

Celebrating small steps triggers more dopamine than saving it all up for one big achievement. You will not be celebrating with champagne and caviar each day. You will be giving yourself permission to have that "Touchdown!" feeling. This feeling is better than external rewards. It's free, it has no calories, and it doesn't impair your driving. You have a small victory every day. Why not enjoy it?

Commit to doing this every day, whether it feels good or not. At first, it might feel dumb to look for reasons to pat yourself on the back. And the reasons you come up with might make you uncomfortable. But you can decide to be worthy of your own applause and enjoy the feeling, even if just for a split second. If it feels fake or forced, that's normal, because the old circuits that berate your accomplishments feel normal and true.

Do not undermine your good feeling by apologizing to yourself for the triviality of the accomplishment. Just enjoy the split second of

triumph and move on. It's just a spark, but if you do it every day for 45 days, you will be your own best spark plug.

Celebrating small accomplishments is a useful skill because big things come from many small steps. Big accomplishments don't make you happy forever, especially when you're in the habit of thinking of happiness as something that comes from a far-off goal. You can learn to be happy with your progress instead.

Your daily triumph will feel better if it's something you do rather than just a one-upping of someone else. If you limit yourself to winning in ways where another person has to lose, you will end up with side effects. You can celebrate what you are creating instead of just who you are defeating.

Move toward a new goal

Ten minutes a day is enough to feel momentum instead of feeling stuck. You don't need a lot of time or money to move toward your big goal. Just commit to spending ten minutes on it each day. That's not enough to move mountains, but it's enough to get close enough to the mountain to see it accurately. Instead of dreaming about your goal from afar, you'll gather the information you need to make a realistic plan. The goal might change as your information grows. Those ten-minute investments can free you from a fantasy goal that wouldn't work, and set you on the road toward a modest goal that you actually achieve. Your ten-minute efforts can help you define manageable steps instead of waiting for huge leaps.

Spend the time on concrete action, not just fantasizing about quitting your day job. Spend it digging into practical realities. Don't spend it all trying to get help from others— it's not their goal. Do this faithfully for 45 days and you will have the habit of moving forward.

If you think you can't spare ten minutes a day, consider the time you already spend dreaming of what you'd rather be doing. You can use that time to research the necessary steps. You will get a dopamine feeling each day as those steps come into view. You will start expecting that dopamine feeling, and look forward to it. You will learn to feel that it's possible to transform a dream into reality with steady effort.

When your ten minutes is over, go back to living in the present. Do not make a habit of putting all your focus on the future.

Divide an unpleasant task into smaller parts

Everyone has a dreaded task that stands in their way. It could be physical, like the mess in your closet that wastes your time every morning. It could be social, like the trust you'd like to repair with someone before it breaks. Commit to spending ten minutes a day on the dreaded task. You don't need to have a solution when you start, just the willingness to take many small steps.

You may think closets cannot be cleaned out in ten-minute chunks. You may think relationships can't be renegotiated in small bits. But you may never start if the task looks too big, so go into that closet and pull out one chunk of mess and spend ten minutes sorting it. Spend ten minutes planting goodwill where bad will had been growing. Don't let a day go by without tackling the next chunk, and then appreciate yourself for it. Keep it up for 45 days, and you will be comfortable tackling the annoyances that stand in the way of making your life better. The great dopamine feeling will entice you into doing what needs to be done.

If your dreaded task is miraculously finished in a few days, keep going. Find another painful problem to start on so you continue for 45 days. Then you will be in the habit of facing tough challenges in small increments instead of being intimidated by them. Remember to feel good about what you've done each day. Soon, you'll have the habit of tackling obstacles and feeling rewarded by it.

New dopamine strategies	

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Keep adjusting the bar

Good feelings flow when the level of challenge you face is “just right.” If a basketball hoop were too low, you would get no pleasure from scoring points. If the hoop were so high that you never scored, you wouldn’t want to play. **People enjoy shooting hoops when there’s effort and reward for effort. You can adjust the hoops in your life to you get more of that great dopamine feeling.** For 45 days, you can experiment with lowering the bar in areas where you have set yourself impossible goals, and raising the bar in places where you score too easily and feel no reward. For example, if you live on frozen dinners while dreaming of cooking gourmet banquets, define a moderate cooking goal and start your 45 days now.

Building New Endorphin Circuits

Laugh

Laughing stimulates endorphin as it spontaneously convulses your innards. Find what makes you laugh, and make time for it. A big *ha-ha* laugh is necessary to trigger endorphin. Just sneering at people you disdain doesn’t do it. Nor does laughing on the outside, although that might prime the pump. It can be hard to find what triggers your laughs, but you can commit to keep sampling comedy until you get your daily laugh.

Laughing seems to involve the release of fear. One common fear is expressing emotions that seem unacceptable. When a comedian expresses such feelings in public and survives, it feels good. Put that good feeling at the top of your priority list for 45 days instead of thinking it’s frivolous. Don’t give up if it takes a bit of shopping. I often find things “not funny” when others enjoy them, but I have found a local improv troop that always seems hilarious to me. So I make time for it.

Cry

Crying releases endorphin along with the unhappy chemicals because of the physical exertion. **I am not saying that crying is a good habit. But most adults habitually squelch the urge to cry, and that creates tension. Un-squelching relieves the tension.** A few minutes of crying can relieve a bad feeling that you’ve squelched for years. You can’t cry on cue, nor should you make a goal of crying. But for 45 days, you can give yourself

time and space and permission to cry if the urge arises. Whether you cry or not, the important step is to notice the physical sensations in your chest, back, abdomen and throat that you are squelching. This tension will loosen when you pay attention to it. The unpleasantness of the moment will pass and the nice loosening will stay with you.

It bears repeating that habitual crying is not the goal. This daily practice is to notice the muscle tension that results when your crying reflex wars with your don't-be-a-crybaby reflex. For 45 days, you can commit to noticing the tension and stopping to feel it instead of ignoring it. The feeling may be so familiar that it's hard to notice. You could get things started by watching *Mommy Dearest* and *Precious* and *Dr. Zhivago*. Other people's tragedies trigger your mirror neurons, and it may feel safer to release grief connected to a stranger's life than to your own.

Crying is our chief survival skill at birth, but over time we learn that crying can leave us worse off. We learn alternatives, but sometimes you completely run out of alternatives and nothing has worked. Your mammal brain releases a desperate feeling, like a trapped animal. Your cortex can distract you away from this feeling, but your muscles can get stuck in the tension that a trapped animal would use to armor itself. You can wear out your crying/breathing muscles in the same way that any over-used body part wears out. Crying can be physical therapy or even ergonomics for your tensed-up diaphragm.

Exercise differently

Changing your exercise routine is a good way to trigger endorphin. When you repeat the same exercise all the time, you are always activating the same muscles and neglecting the same muscles. If you try to get endorphin from the same old exercise routine, you are likely to over-work a few spots beyond their capacity to repair themselves. You can stimulate endorphin by working different places instead.

Your body has three layers of muscles. When you vary your exercise, you give the neglected, constricted layers more attention. Since they're weak, they have to work harder, so you stimulate real development where it's needed without going overboard on the parts you over-rely on. Chasing an endorphin high is not worth the risk of wearing out a part and needing an unpleasant parts-replacement. Variety is a great alternative. And

if you're a person who doesn't exercise at all, everything you do will be something different.

When you start a new type of exercise, you may feel uncoordinated. That's just the point. You are stimulating circuits that are not developed. Instead of worrying about your poor performance in the new activity, give yourself 45 days of acceptance. Then try another variety of exercise for 45 days. Of course, don't work any new part beyond its endurance either.

The choices for exercising differently are limitless, but here are two important options.

Stretch

Endorphin is stimulated when you stretch. Everyone can add stretching to their daily routine because you can do it while you're watching TV, waiting on line, and talking on the phone. Mild stretching brings circulation into constricted areas. Stop before you feel pain. Do not assume that if a little is good, a lot must be better. If you stretch every day for 45 days, you will come to enjoy it so much that you will look forward to doing it every day.

New endorphin strategies	

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Stretching is not just about arms and legs. Sample a class, such as yoga, to experience deeper stretches without hurting yourself. The point is not to push harder on the usual spots but to stretch spots you didn't know

you had, such as the muscles between your ribs. Don't forget to stretch your toes, fingers and even ears.

Slow movement is a variation on this theme. Tai chi and qi gong are so slow that you may think they're not real exercise. But super-slow movement is more of a workout than it seems. It forces you to use muscles evenly, activating the weaker muscles instead of letting the dominant ones take over. Commit to doing something that doesn't look like "real exercise" for 45 days, and you will feel the difference.

Make exercise fun

Consider switching to a fun exercise for 45 days. An exercise that triggers your happy chemicals helps motivate you toward more vigorous exertion. There are endless ways to make exercise fun. I took a waltzing class and was amazed at how hard I worked. Many people make exercise a social activity, from team sports to chatty hikes. It's fun to exercise with music or an enjoyable audio book. Novelty also makes things fun. My yoga teacher makes the class completely different every week. Biking or hiking to new destinations is stimulating. Finally, gardening has an extrinsic reward, which motivates many people to keep exerting. Adding fun to exercise can help you persist.

Building New Oxytocin Circuits

Build on "proxy" trust

Social trust is hard to create, so people often use proxies. Animals, crowds, and digital friends can stimulate the good feeling of social trust without the complications of human bonds. However, these proxies stimulate less oxytocin than live personal contacts. You can get more oxytocin by using these proxies as foundations on which to build.

Proxy trust is comfortable because there's less risk of disappointment. Animals don't betray you, large crowds don't judge you, and digital friends are always available. Direct human trust always comes with the risk of disappointed expectations and feelings of betrayal. Those bad feelings build links that fire when you think about trusting someone.

And when those neurochemical alarm bells ring, your brain presumes there's a good reason.

But if you give up on direct interpersonal trust, your brain feels that something is missing. Oxytocin is missing. You can wire yourself to trust without triggering your own alarm. Every time you feel good about an animal, or a large group, or an on-line relationship, tell yourself "I am creating this good feeling." It may sound silly or self-centered, but it builds confidence in your oxytocin pathway. If you focus on the trust in your life, you give it a chance to grow. Otherwise, your ability to distrust will keep growing.

Notice your trust feelings from any source for 45 days, and you will build a foundation that can support more.

Place stepping stones

Maybe there's someone you want to trust, but you can't bridge the divide in one leap. You can create intermediate steps that build trust gradually. The stepping stones can be placed so close together that neither party risks a big betrayal. Two people or two groups with an unfortunate history cannot always wipe the slate clean all at once. It's good to know you can build trust with a long series of very small interactions. The steps don't need to create complete trust, only positive expectations about the next step. Each small experience of trust stimulates the good feeling of oxytocin, and the neurons that can trigger it again.

Divorce lawyers use this strategy to help a couple reach agreement. You might try it with the person who is "ruining your life." Initiate a small interaction with someone who has disappointed you in the past. Though it's hard to trust someone who has betrayed you, you can arrange something tiny. If that proceeds without disaster, you may be comfortable doing it again. The goal is not to blindly trust and get disappointed. The goal is to build positive expectations.

This is hard work, and it won't feel good in the short run. But in the long run, it builds confidence that you can do something about the thorns in your side.

Coexisting without trust is draining. But it's even worse to take a leap of faith and get disappointed again by your crazy neighbor or the co-worker who stabbed you in the back. Where baseline trust is low due to a

history of conflict, you can build up to a comfortable level in small increments.

You can't time it exactly since you are working with another person's responses. But you can decide to spend 45 days crafting reciprocal exchanges that build stepping stones toward trust with difficult people. Whether or not you succeed with any one particular person, you will build the good feeling of having some control over the trust bonds in your life. That feeling is an oxytocin circuit.

Be trustworthy → *flaky*

Oxytocin works both ways. When other people trust you, it feels good whether or not you trust them. You can create opportunities for other people to trust you.

Handle this strategy with care. You do not want to be the rescuer of everyone you know 45 days from now. Your goal is simply to feel the pleasure of another person's trust for a moment each day. Of course you can't force other people to trust you, and it may take more than a moment to extend yourself in ways that build trust. Do not spend a lot of time seeking approval. Simply honor your commitments, and then pause to enjoy being a person who honors their commitments. It may sound self-important, but the circuit it builds is the foundation of future trust. So plan to honor your commitments scrupulously for 45 days.

Count your change

You can practice the old adage, "trust, but verify." That may sound harsh, but verifying makes it possible to develop trust with strangers. If you're too nice to verify, you can get stuck inside the safe harbor of people you already trust.

To venture beyond, you have to interact with people whose trustworthiness is unknown. By trusting and verifying, new trust grows. If you do it for 45 days, you can't predict what others will do, but you can build confidence in your ability to extend your trust circle. Instead of being confined to the niche where you don't have to count your change, you have a tool for taking controlled risks.

Do not grow your circle by trusting people who are not trustworthy. The goal is not to trust as an end in itself, but to gather

information about where you can trust. You succeed whether the other person shortchanges you or not, because you will have built a verification plan that works. Celebrate that each day, whether your trust is rewarded or disappointed.

Natural selection rewarded those who fanned out from familiar turf. In the animal world, young males are often ousted from their natal groups or leave on their own initiative because they're excluded from mating opportunities. According to blood samples taken in the wild, they experience huge stress when they leave those they trust for parts unknown. Their stress rises further when they seek admittance to a new troop, because the males of that troop reject potential rivals. But the seekers don't give up. Mammals keep seeking bonds of trust because it feels great when they succeed.

New oxytocin strategies	

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Get a massage

Massage stimulates oxytocin. You don't have to spend a lot of money to have a daily massage. You can start a reciprocal exchange with a massage buddy, and build skill in a brief community-education class. Self-massage methods are surprisingly effective, too. The qi-gong self-massage technique requires no special strength and it's easy to learn from a video. Once you create the habit of stimulating your oxytocin in this way, it's a pleasure that will always be available to you.

Building New Serotonin Circuits

Take pride in what you've done

Developing pride is tricky. On the one hand, you know that seeking applause can have bad side effects. But when you get no recognition from others, something feels wrong. You could applaud yourself, but the brain is not easily tricked by hollow self-respect. It wants respect from others because that has survival value. There is no guaranteed, safe way to get this serotonin boost, alas. Social recognition is unpredictable and fleeting.

You can stimulate your serotonin without being “a jerk.” Simply express pride in something you’ve done once a day. Pride is a rudder that helps you navigate opportunities to get social recognition. It helps you steer between the opposite extremes of constant approval-seeking and dejected cynicism.

Taking pride in yourself means more than silent meditation. It means daring to say “Look what I’ve done!” to another living soul. Asking others to respect your accomplishment is risky because you may be disappointed. People often protect themselves by insisting that social respect doesn’t matter, or it’s hopelessly unfair. But these rationales don’t soothe the mammal brain longing for the sense of security that social respect brings.

So every day for 45 days, you will say “Look what I’ve done” and expect a positive reaction. If you don’t get the reaction you hope for, it will not kill you. The bad feeling will pass and the next day you will crow with a positive expectation again. If you already have negative expectations, this is hard to do. But if you force yourself to crow for five seconds a day for 45 days, you will find the social respect you expect.

You don’t want to be a person who will do anything for attention. But many of the people we admire today got little respect while they were alive. They kept working without knowing the respect would come when they were not there to enjoy it.

Conversely, people who get lots of public applause often complain that they feel trapped by it. They say they’d rather do something different, but they fear losing the applause.

Whether you get a lot of social regard or a little, your brain will keep longing for it. That’s what our mammal brain does. And that’s why we

→ show your work, 炫耀

need the skill of taking pride in our own accomplishments instead of waiting for applause.

If you focus on your shortcomings, you tend to overlook the applause you already have. More important, you may be getting quiet respect that is not expressed as audible applause. That's why it's useful to force yourself to expect appreciation for one moment a day. It allows you to take in what is already there.

"I'm proud of myself that —"

Enjoy your position in each moment

When mammals gather, they try to dominate each other. If you always take the subordinate position to avoid conflict, you get frustrated. But if you always seek the dominant position, that has its frustrations too, since both positions have pros and cons, and you can't have absolute control over which one you're in, why not just enjoy the pros instead of focusing on the cons?

Being in the subordinate position has a positive side. Someone else is in the "hot seat." You're not responsible for protecting others, and you don't have to worry about defending your position.

The positive side of the dominant position is the pleasure of getting respect, and the freedom to make choices instead of being subordinated to the will of others.

Your status will always be going up and down. If you fret over your position, the fretting will never end. Instead, you can enjoy the benefits of wherever you find yourself. For 45 days, notice your status frustrations and remind yourself of the hidden advantages of wherever you are. Once you make this a habit, you will want to do it always. Your mammal brain is always keeping track of your status, as much as you wish it wouldn't. This is a way to make peace with it.

Notice your influence

Many people look for the bad in others. They feel good about themselves in comparison, and that triggers serotonin. But this pleasure comes at a high price. You surround yourself with bad will. A slight change can give you the same serotonin boost without the side effects. Simply enjoy your influence on others. Without being arrogant or controlling or

critical, you can make a habit of noticing when others mirror your good example. Don't expect credit or a thank you. Just feel good about it.

This may sound arrogant. But every brain longs to be important, and if you don't meet that need in healthy ways, you will be tempted to meet it in ways that have bad side effects. Everyone wants to have an impact on the world. No one wants to die without a trace. Some people even settle for having a bad impact, just to feel their own influence. There is an alternative.

→ pay back, pay it forward

You are already having an impact on the world. Right this minute, people may be respecting you behind your back. If your antennae are busy looking for disrespect, you won't know it. People may be secretly admiring you, and instead of enjoying it, you may be anticipating criticism from them. You're wasting the potential serotonin booster.

You can stop once a day to appreciate your good effect on others. Don't call attention to it or say "I told you so." Simply take quiet satisfaction in your subtle influence on the world. If you do this for 45 days, you will become alert to the ways in which you have influenced others. You will be less frustrated by their flaws and by their neglect. You will have a mental pathway for feeling your importance when you need to.

Parents often bemoan their lack of influence. If they knew how much their kids really are influenced by them in the long run, they would pay more attention to the example they set.

Make friends with something you can't control

Your brain feels good when you're in charge. It searches for things you can control, and avoids things you can't control. But much of the time our control is limited, so frustration percolates. You can learn to feel comfortable with your limited control instead. That doesn't mean giving up and living out of control. It means feeling safe while you're not in control.

You can build this circuit by giving up a habit that usually helps you feel "on top of things." For example, if you are a person who tries to bake the perfect souffle, spend 45 days cooking without recipes. But if you pride yourself on coloring outside the lines, courageously stay inside the lines for 45 day.

If you are a person who likes everything neat, try having one space where you let junk pile up for six weeks. And if you are a person who

“实验精神”

hates order and loves chaos, be a neatnik for six weeks. It might feel awful on Day One, but you have 44 more days to try and fail and accept that.

Getting rid of the clock is a great way to experiment with control. No one can control time. We manage this harsh reality in different ways— constant lateness for some, and constant clock-checking for others. Here are some small ways to ignore the clock and make friends with the passage of time.

Try starting an activity without having an exact time you need to stop, and finish the activity without ever checking the clock the whole time. It's over when you feel like it's over.

Set aside a time each day during which you have no advance plan.

Designate a day in which you wake up without looking at the clock, and go about your business with no time-checking.

No matter how busy you are, you can find a way to stop submitting to the clock for a few minutes a day. You may be surprised at the bad feelings that come up, as much as you think you want to be free of time pressure. The bad feelings won't kill you, however, and accepting them helps you accept the fact that you can't control time.

The mammal brain feels good when it dominates, but you can't count on dominating all the time. That's why people like things that give them the feeling of being in charge. Some people love to break traffic laws, and others love to scold people who break traffic laws. Whatever you do to feel important, it can't work all the time. Some of the time you will feel unimportant. That triggers cortisol, but you can teach your brain that you are safe even when you feel unimportant.

Instead of trying to control the world in your accustomed ways, try giving up control for 45 days. Don't quit your job and beg with a rice bowl. Just stop checking the weather report. Stop buying lottery tickets. Stop expecting the world to work according to your rules. Choose one habit you have for feeling in control, and do without it. If you can't give up your control ritual completely, commit to giving it up for a certain time each day. You will end up feeling safe in the world despite your inability to control it.

New serotonin strategies	

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Circuit-Training for Your Brain

Building new circuits is hard because it feels wrong when you're doing it right. Old circuits give you the feeling of knowing what's going on, so abandoning them for a weak and unproven circuit feels like a survival threat. Once the new circuit is established, you feel great. But that doesn't get to happen if you give up and rush back to the security of the old one. **Here are some tools to help keep you blazing the new trail.**

Mirror *fake it till you make it*

Find people who already have the habit you'd like to create, and watch them. Your mirror neurons will light up and that will get your circuits going. This is a great way to overcome inertia because those initial connections are the hardest to spark.

Modeling people can be awkward, and the person with the habit you seek may not be aware of that habit in words. And that person may have other bad habits! Mirroring is a surgical tool. You don't substitute another person's judgement for your own. You just model their facility with a specific behavior that your own judgement aspires to. The world is full of people who have the behavior you need, and they'd love to show you how.

Balance

Your brain wants all four of the happy chemicals. You are probably better at some than others. It's tempting to choose projects in the

areas you're already good at. But your brain will benefit more if you give it the happy chemical it has been missing. You may have to enter unknown territory to do that, but higher risk brings higher rewards.

If you are already a dopamine kind of person who's good at setting goals and meeting them, you might do more for yourself by working on a different happy chemical. If you're already an oxytocin kind of person, good at social bonding, you'd get higher returns by investing your effort in a different area. If you're a serotonin-focused person, good at winning respect, developing other happy-chemical circuits would help you flourish. And if you tend to be an endorphin person, drawn to mastering pain, you could benefit from focusing elsewhere.

When you depend on one happy chemical more than others, you don't know what's missing. You equate happiness with the kind you already know. So try a project from each of the four happy chemicals. Your brain will thank you.

Balancing your neurochemistry is not the same as "work-life balance." It's true that some people spend too much time working and neglect other ways of meeting their needs. But if you had more free time and spent it running the same circuits, you still wouldn't get neurochemical balance. If you manage your home the way you manage at work, then more time at home wouldn't make you happier. It would be like a vegetarian seeking balance with a new vegetable or an athlete seeking balance with a new sport. You keep seeking rewards in familiar places until you discover other places.

The good news is that a little bit of the neurochemical you lack goes a long way. You don't need to make big changes to feel big results. Your brain rewards you for taking the neural road-not-taken. But it won't release the new happy chemical immediately. It takes time to build the infrastructure.

Graft

You can graft a new branch onto the roots of a happy circuit you've already developed. I have often used my love of color to make difficult things fun. Every time I had to move, I looked forward to coloring my new home. When I work on my websites, I enjoy designing the colors. It seems trivial, but a trivial amount of spice makes all the difference in your enjoyment of a dish.

Grafting can help balance your neurochemicals. An activity that triggers one happy chemical can be grafted in a way that triggers the others. Let's say you love photography. It triggers dopamine when you seek and find a particular shot. It can stimulate oxytocin if you share the images with others. And serotonin flows if you enter your pictures in exhibitions. You can stimulate what you're missing within the activity you love.

Let's say you're a person who loves parties. You're already good at stimulating oxytocin in this way, and if you plan parties you can stimulate dopamine. You might work on fund-raisers or political events to stimulate serotonin. New happy chemicals are easier to spark when you build onto existing roots.

Many people connect to old flames in later life. This clearly grafts new good feelings onto old roots. Another common grafting strategy is returning to a hobby you loved as a child. Building a hobby into a career is another. New happy circuits are hard to build, so adding branches to an existing tree can help.

When I retired from academia, I began judging science fairs. I love this new limb on my old trunk. I meet kids that I deeply respect, and they are thrilled to have professional attention to their work.

Legacy

Anything connected to your DNA triggers happy chemicals. Traditionally, people doted on grandchildren as they aged, which created a tangible sense of their legacy. Many alternative ways to feel good about your legacy are popular today. Whether you research your ancestry or preserve your family traditions, it makes your brain feel good. You don't consciously connect it to your genes, but it builds on a connection that's already there. Even if you just buy pizza for a niece or nephew, you feed your mammal brain's interest in the survival of your genes. You can say genes don't matter, but your brain has a curious way of perking up at anything involving your genes.

Connecting with children rewards the urge for legacy, even if they're not your own children. If you do have your own children, every moment with them is part of your legacy whether it's obvious in the moment or not. I figured this out when my son's school closed for teacher training. I heard parents complaining about the inconvenience of all the extra no-school days, and I had that "I should be working" feeling too. Then

I learned to see it as a gift. An excuse to take a day off and do something meaningful with my kids was being handed to me. I would be crazy to see it as a burden.

You can define your legacy however you want. You can reorganize the equipment at your gym. You can invent a new stitch that lives on at your knitting club. It doesn't have to make logical sense. When you see that something of yourself will live on, it's strangely effective in triggering your happy chemicals.

Fun

New circuits grow easily when repetition is fun. I had fun learning foreign languages by traveling and watching foreign films. Many people learn English by watching TV, and humans have always excelled at learning languages “on the pillow,” as they say in French (*sur l'oreiller*).

Building a new circuit requires more repetition than most people can tolerate. If you don't find a way to make it fun, you may not keep at it. One reason adults don't build new neural circuits is that they neglect the power of fun. You have to find new kinds of fun if you want to build new circuits, or you'll be stuck in the pathways of old amusements. Of course, you shouldn't limit yourself to things that are fun. But if you can find the fun in a task you need to master, it helps you persist long enough to pave the circuit.

Chunk

The brain can only process a few inputs at a time, so it divides new things into chunks. We are always making sense of the world by organizing the chaos of raw detail into manageable chunks. Dividing new challenges into chunks makes them easier to tackle. One of my students told me he bicycles to the top of a mountain by dividing it into quarters, and celebrating each intermediate goal. Logically that makes no sense since the mountain is still just as high. But chunking succeeds at tricking your brain into feeling good even when you're not really fooled.

I tried it on my own “mountain”— the mess in my garage. I was amazed at how well it worked. My husband and I both dreaded the chore, but longed to have it done. I suggested that we do it for fifteen minutes, and leave the rest for another day. I thought we would get it done in fifteen-

minute chunks. But once we got started, we didn't feel like stopping. When we stood at the bottom of the junk mountain and looked up, we couldn't get ourselves to start. But when we set our sights on an easy goal, we expected to succeed. The good feeling it triggered led to success, more positive expectations, and more good feelings. Small sparks lit a fire of enthusiasm.

Favorite circuit-builders	

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Patience

It takes time for electricity to zip through new pathways. Forty-five days may seem like a long time to repeat something. If you're tempted to stop in less than forty-five days, think of it as prescription medicine that you have to finish even if your symptoms are gone. New happy strategies won't feel effortful forever. After a few weeks, they'll just feel good, and they'll stay with you forever.

Accept

I can always think of ways I could have done better, even when I do well. If I succeed at building a new circuit, I wonder why I didn't do it a long time ago. When I see an adorable toddler, I wonder why I don't remember more of my children's toddlerhood. Then I realize I am creating unnecessary disappointment. Struggling to optimize constantly can lead to frustration. Life is precious and we naturally want to make the most of it. But optimization may not trigger happy chemicals. Sometimes, you get more by accepting what is. When I find it hard to stop optimizing, I remind

myself that the 1978 Nobel Prize in Economics was awarded for a mathematical proof that “satisficing” is better than optimizing.

Plan

Build a new circuit before you need it. Expose yourself to new music before your current faves bore you, and make new friends before you need them. Before you retire and get wrinkles, develop new sources of pride. You may feel too busy to do these things. But once they trigger happy chemicals, you’ll be glad you did. Instead of waiting for happy chemicals to come your way, plan to “do something.”

Planning can relieve unhappy chemicals, too. You can plan to worry while brushing your teeth, and relinquish anxiety the rest of the day. If that’s not enough worry time, plan to do it while you’re flossing as well. In 45 days, you may love the results.

You can re-wire yourself if you’re willing to go about it systematically. You can find peace without the habits that are currently causing distress. With so many strategies to choose from, why would anyone reject them all and effectively choose to be unhappy instead? The following chapter shows that people choose unhappiness for reasons that are so familiar we take them for granted.