The Art of Impossible: A Peak Performance Primer

Steven Kotler
2021
Summary and Notes

Introduction

This book is designed for those of us with completely irrational standards for our own performance and totally unreasonable expectations for our lives.

Impossible (capital I) - extreme innovation, things that have never been dreamed and/or done, beyond our wildest dreams.

Impossible (lower case i) - things that are still beyond our capabilities and imaginations, just on a different scale. These are things we believe are impossible for us personally, at the moment.

> If you devote your life to accomplishing lower case i impossible, you can sometimes end up accomplishing a capital I Impossible along the way. There is no clear path between here and there and most have very poor odds of success. However, the only thing more difficult than the emotional toil of pursuing true excellence is the emotional toil of not pursuing true excellence. This isn't about being happy or sad. **More meaningful does not typically mean more pleasant.**

Achieving the impossible is driven by extreme innovation. There must be a biologically based formula that those that achieve the "impossible" are tapping into - whether they are cognitively aware of it or not. History is littered with the "impossible", our past is a graveyard for ideas that have held this title. It took us five thousand years from the first winged human cave drawing to the Wright brothers, then transatlantic flight, then the moon.

The term formula is used in the same way computer scientists talk about algorithms, as a sequence of steps that anyone can follow to get consistent results. This book is dedicated to the details of this formula - how to achieve the impossible as we spend more time in peak performance mode.

Personality doesn't scale. Biology scales.
In the field of peak performance, too often, someone figures out what works for them and then assumes it will work for others. It rarely does.

We all share the same neurobiology, the structure and function of the nervous system and how all the parts work together. We do not share genetic traits and tendencies. To achieve peak performance and achieve great things, **you have to understand our shared neurobiology and how your tendencies interact with them**. You have to get below the level of personality and tendencies, your subjective psychology, and decode the foundational neurobiology, then

you unearth mechanisms - basic biological mechanisms - shaped by evolution present in most mammals and humans.

What is the biological formula for the impossible? - **FLOW**

Flow is defined as an “optimal state of consciousness where we feel our best and perform our best.” It is the state created by evolution to enable peak performance. Flow refers to those moments of rapt attention and total absorption when you get so focused on the task at hand that everything else disappears. Action and awareness merge. Your sense of self vanishes. Time passes strangely. Performance and creativity simply soar. Flow always plays a starring role whenever the impossible becomes possible.

On the **physical** side, flow increases strength, endurance, and muscle reaction times while our sense of pain, exertion and exhaustion all significantly decrease. The impacts of flow on the **cognitive** realm are bigger. Motivation and productivity, creativity and innovation, learning and memory, empathy and environmental awareness, and cooperation and collaboration all skyrocket - in some studies as high as 500 percent above baseline.

The wide variety of skills that flow amplifies turns out to be everything you need to fight, flee, explore or innovate - flow increases your ability to find or create resources, the prime driver of biological survival.

We must train the same skills that flow amplifies - **motivation, learning, and creativity**.

William James (late 1800s) - “The human individual lives usually far within his limits; he possesses powers of various sorts which he habitually fails to use. He energizes below his maximum, and he behaves below his optimum. In elementary faculty, in coordination, in power of inhibition and control, in every conceivable way, his life is contracted like the field of vision of an hysteric subject - but with less excuse, for the poor hysteric is diseased, while in the rest of us, it is only an inveterate habit - the habit of inferiority to our full self - that is bad.”

The reason we are not living up to our potential is that we are not in the habit of living up to our potential . We’ve automated the wrong processes. **We’re playing the wrong game and asking the wrong questions** - and it’s bad.
You lose this infinite game of life by not trying to play full out, by not trying to do the impossible - whatever that is for you.

Far beyond our comfort zone, that’s where we find out who we are and what we can be. The only way you can find out if you are capable of pulling off **YOUR** impossible - is by attempting to do so. Chronically, daily, hourly.

Peak human performance is an infinite game:
(the four sections of this book)
Motivation gets you into the game.
Learning is what helps you continue to play.
Creativity is how you steer the game.
Flow is how you turbo-boost the results beyond any rational standards and reasonable expectations.

All of these things work together to produce the real art of impossible. **Welcome to the ultimate infinite game.**

Part I - Motivation

Chapter 1 - Motivation Decoded

The central premise of this book is that impossible has a formula. Whenever we see the impossible become possible, we are witnessing the end result of a quartet of skills - Motivation, Learning, Creativity, and Flow - expertly applied and significantly amplified.

We want biology to work for us rather than against us by using science to decipher these skills.

The place to begin is motivation, which is what starts us down the path of peak performance. Motivation is a catch-all phrase for 3 subsets of skills: Drive, Goals and Grit

Drive - refers to powerful emotional motivators such as curiosity, passion and purpose. These are *feelings* that drive behavior automatically. Drive is different from grit. When we are driven by curiosity, passion and purpose, it requires effort, but it feels like play, and when work becomes play, you are playing an infinite game.
Goals - are about figuring out exactly where you want to go. The road is long, we need the boost of knowing where we are going.
Grit - is persistence, determination, and fortitude - the ability to continue regardless of the difficulty involved.

Drive
Elite level performers never rely on a single source of fuel to sustain them on the road to mastery.
On the **physical side**, elite performers STACK (cultivate, amplify, align) sleep, exercise, nutrition and hydration - the foundational requirements for producing physical energy.
On the **psychological side**, they STACK (cultivate, amplify, align) drivers such as curiosity, passion, and purpose. By stacking these sources of mental energy, they ensure on-demand access to all of life's most potent emotional fuels.

What drives us?
From an evolutionary perspective, resource acquisition is the main driver of behavior. From this perspective there are only two strategies available. **Either you fight for dwindling resources, or you get creative and make more resources.** What we are really talking about are the psychological fuels that energize behaviors that best solve resource scarcity: fight/flee and explore/innovate.

Psychologists split our psychological drivers into extrinsic and intrinsic
Extrinsic drivers are rewards that are external to ourselves like money, fame and sex and they are potent by themselves.
Intrinsic drivers are the psychological and emotional forces such as curiosity, passion, meaning and purpose. Autonomy is the desire to be in charge of one's life, mastery the pleasurable sensation of knowing a job is well done.

External drivers are fantastic, but only until we feel safe and secure within our basic needs. Studies tell us that beyond this base level, happiness is not achieved by more money since our basic needs are met. **After basic needs are accomplished, most people want intrinsic rewards** - autonomy of their work and time, being able to seek out their passions with curiosity to work on things that interest them and they want to work on projects that matter, that have meaning and purpose.

The Neurochemistry of Reward

Motivation is message. In order to send this message, the brain relies on **4 components**:

The messages themselves
1. Neuroelectricity - electrical signals tell us to do more of what we are doing
2. Neurochemistry - chemical signals tell us to do more of what we are doing, or less of what we are doing

The places those messages are sent from and received
3. Neuroanatomy - specific brain structures performing specific functions
4. **Networks** - brain structures that are hardwired together by direct connections or structures that tend to activate at the same time.

Therefore, when the brain wants to motivate us, it sends out a neurochemical message via one of **7 specific networks**: rage, fear, lust, panic/grief, care, play/social engagement and seeking/desire.

Two of These Networks
The **play/social engagement system** is all about the fun stuff we used to do as kids. Scientists once assumed the point of play was practice, which it is on one level. On another level we now understand that play is mostly designed to teach us about social rules and interaction.

The **seeking/desire system**, sometimes called the reward system, is a general purpose network that helps us acquire the resources we need for survival. “In pure form, this system provokes intense and enthusiastic exploration and anticipatory excitement and learning.” (Jaak Panksepp)

When we play or seek, the brain releases **powerful neurochemicals** that make us feel good about the process and possibilities of that process:

Dopamine - the brain's primary reward chemical, driving all the various manifestations of desire. We feel it’s presence as excitement, enthusiasm and the desire to find meaning
Oxytocin - produces trust, love and friendship
Norepinephrine - produces a large increase in energy and alertness, hyperactivity and hypervigilance
Serotonin - produces a calming and peaceful affect with a gentle lift in mood
Endorphins/anandamide - are pain-killing bliss producers and stress-relievers producing relaxed happiness.

Yet the neurochemistry of reward isn’t simply about how individual neurochemicals work, as we are often motivated by combinations of these neurochemicals. **FLOW** may be the biggest neurochemical cocktail of all. The **FLOW** state appears to blend all six of the brain’s major pleasure chemicals and may be one of the few times you get all six at once. This potent mix explains why people describe flow as their “favorite experience”, while psychologists refer to it as **“the source code of intrinsic motivation.”**

The Recipe for Drive
We are going to learn to “stack” - that is cultivate, align, amplify, and deploy our five most potent intrinsic drivers:
Chapter 2
Curiosity - your basic interest in something
Passion - taking curiosity and fanning it into a personal quest
Purpose - connecting that passion to a cause greater than ourselves
Chapter 3
Autonomy - once you have a purpose, the system demands autonomy, the freedom to pursue that purpose
Mastery - then the system requires mastery, the desire to continually improve the skills needed to pursue that purpose

We are focusing on this **stack of five** because they’re our most powerful drivers and because they are neurobiologically designed to work together. With intrinsic drivers properly stacked, our biology is working for us rather than against us. Built correctly, life will feel exciting, interesting, full of possibility and thick with meaning. The act of stalking the impossible actually helps us to stalk the impossible.

Chapter 2 - The Passion Recipe

You want to take the time to dial in intrinsic drivers today because, two years from now, if you discover you've dialed wrong, consider how frustrated you'll feel having to start all over again. In peak performance, sometimes you have to go slow to go fast. This is one of those times.

Make a List
To start stacking intrinsic drivers, use pen and paper and write down **25 things** you are curious about. Be as specific as possible. Specificity gives your brain's pattern recognition system the raw materials it needs to make connections between ideas - the more detailed the better.

Hunt for Intersections
After completing the list look for places where **these 25 ideas intersect,** thus amping up engagement and pattern recognition - what the brain does at a very basic level. As pattern recognition is engaged and ideas flow, the brain rewards us with dopamine.

Dopamine:
Is a powerful **focusing** drug making us excited and engaged, more likely to drop into FLOW. Tunes signal-to-noise ratios in the brain, increasing signal and decreasing noise, thus helping us detect more patterns - a feedback loop of **pattern recognition**, dopamine, more pattern recognition, more dopamine. This is why good ideas often lead to multiple good ideas in short order.
Is a feel-good drug, tagging the process as **pleasurable** and addictive, making you want to continue and to do it again later.
Amplifies memory automatically. The more neurochemicals that are expressed during an activity, thought process, the more likely that experience will move from short-term to long-term memory. It is tagged by the neurochemicals as "important, save for later!"

By stacking motivations, layering curiosity atop curiosity atop curiosity, we're increasing drive but not effort - our internal biology is doing the heavy lifting for us. You'll be working smarter and faster with no perceived increase in personal effort - welcome to **FLOW.**

What parts of your internal world, the external world, keep you from dropping into Flow?

Play in the Intersections
When you have identified spots where curiosities overlap, stay in those for a time. Watch podcasts and videos, read articles and books. Feed them on a daily basis. Advancing knowledge a little at a time gives the adaptive unconscious a chance to process that information. With anything creative, like this very process, it is called **incubation**, and results in further pattern recognition, connecting older bits of info with newer bits. Over time, this results in increased expertise. As we let our unconscious brain do its job, it further feeds curiosity and increases passion.

Pay attention to **two sets of details** as you walk the road of discovery and connections:

1. **The history of the subject** is a narrative of questions, answers and more questions. Historical details of a new subject will let your brain naturally stitch the details together into a coherent story, linking cause and effect, which the brain has a need to do. As you gain historical expertise, your neurochemicals, as before, will reinforce and drive the process deeper and further. The historical narrative you are creating in your brain becomes a de facto memory tree that you can add things to over time, fitting the new facts and ideas in the proper context of the memory tree you are creating for yourself. As this narrative is created in sequence, learning rates increase and time to mastery decreases.
2. **The technical language** that surrounds a subject, while at first foreign and annoying, is annoyingly precise. Often, large chunks of the explanation of a subject are contained within the technical language. The language helps you understand the ideas and is the connective tissue that holds these ideas together. These large chunks of data are also more easily and efficiently stored in your narrative tree which further speeds up pattern recognition in the conscious processes as well as the unconscious incubation time, thus further increasing rates of learning and decreasing time to mastery.

Go Public

To really light the fire that turns curiosity into passion and ensure you're on the right track, we need to amplify that passion with a series of "public successes", which is simply positive feedback from others. **Start conversations with others** concerning your subject or subjects, get feedback. Try an online community or a book club. But do take time, as above, playing in the intersections of the ideas so that you have some level of understanding of the subject area before you go public. You want to be able to add something to the dialog, to be able to ask pertinent questions.

Transforming Passion Into Purpose

Self-determination theory is the most dominant theory in the science of motivation, with **relatedness** a core component. At a base biological level, we need to relate to others to survive and thrive, and as a result, are neurochemically motivated to fulfill this need. More recently, to the idea of relatedness, has been added the concept of purpose, or the desire for what we do to matter to other people.

Neurobiologically, **purpose** alters the brain by decreasing or increasing certain parts of it, resulting in less stress and greater resilience, altering how the brain filters incoming information and helps protect against depression and correlates with a number of well-being measures. **Purpose** also boosts motivation, productivity and focus.

Purpose shifts our attention out of ourselves and puts it onto other people and tasks at hand, thus helping us guard against obsessive self-rumination, one of the root causes of anxiety and depression.

Purpose is also a rallying cry to others if needed for assistance, knowledge, expertise, finances. On the road to Impossible, we're going to need all the help we can get!

Putting Purpose Into Practice
When it comes to crafting your purpose, dream big. This is the overarching mission statement for your life, your capital I impossible. A **"massively transformative purpose" or MTP** is what you are trying to capture and define for yourself. Massive obviously means large and audacious. Transformative means able to bring significant change to an industry, community, or the planet. Purpose is the crystal clear "why" behind this life long effort.

To flesh out and create your MTP, take up pen and paper again and write down **15 massive problems** that you would love to see solved - stuff that can keep you up at night. Be as specific as possible.
Next, look for spots where your **core passion intersects** with one or more of these grand, global challenges - a place where your personal obsession might be a solution to some collective problem. You are seeking the overlaps between passion and purpose. That overlap can be your MTP.

An MTP is both a crucial driver and a great foundation for a **commercial enterprise** - don't sleep on this second point. You're going to need to pay for that passion and purpose. But don't expect this to happen quickly. Start out with a side gig approach at first, nights and weekends. Curiosity into passion - passion into purpose - purpose into patient profit.

Chapter 3 - The Full Intrinsic Stack

Curiosity, passion and purpose are a launching pad toward the impossible, the pieces you place on the board, where this game begins. But they are not enough to carry you through to the end of this life-long journey you're planning. To those three drivers we need to add **autonomy** and **mastery** to the stack

Autonomy is the desire for the freedom required to pursue your passion and purpose - the need to steer your own ship. **Mastery** drives you toward expertise, to hone the skills needed to achieve your passion and purpose - the desire to steer that ship well.

Psychologists Edward Deci and Richard Ryan discovered witn research that **intrinsic motivation** (a term synonymous with drive) is much more effective than **extrinsic motivation** in every situation except those where our basic needs haven't been met.

They also discovered the critical division between **"controlled motivation"** - being seduced, coerced, or otherwise pressured into doing something - and **"autonomous motivation"** - doing what you are doing by choice. Autonomy is always the more powerful driver. The seeking system likes to be in charge of exactly what kinds of resources it's seeking.

Autonomy also turns us into a much more effective version of ourselves via the boost in neurochemistry previously discussed.

How Much Autonomy is Enough?
Google
“20% time” - people spend 20% of their time pursuing projects of their own creation. Over 50% of Google’s largest revenue-generating products were created within this “20% time”
If you’ve already worked through the passion recipe, you can get the results you desire by spending 4-5 hours per week devoted to your newfound purpose.

Patagonia
Patagonia allows people to make their own schedules and to stop work at any time to go surfing.
Making your own **schedule** works well for two reasons. The first is the ability to establish sufficient and chronicall **good sleep hygiene** so that motivation, memory, learning, focus, reaction times and emotional control are optimized. It also lets you work within your personal circadian rhythms and therefore work during the time of day best for them.
Surfing prioritizes exercise and amplifies flow.
Exercise is nonnegotiable for peak performance.
Health, energy and mood enhancement are just a few of the benefits. Replacing stress hormones with mood booster is critical most days of the week. Surfing also has a high likelihood of driving participants into FLOW, amplifying intrinsic motivation to optimal levels.

Our Need for Mastery

Mastery is the desire to get better at the things we do. It’s devotion to craft, the need for progress, the urge to continually improve, stacking little victories on top of little victories, which produces dopamine. We know now that **dopamine** is actually the brain’s way of encouraging us to act - it arrives before the risk, not after the risk - to encourage our risk-taking. Dopamine is the biological basis of exploration and innovation.

The feeling of having **momentum**, is the series of spikes of dopamine day after day. Thus, a single, biggest motivator is making meaningful progress in meaningful work.

Flow Triggers
To date, researchers have identified 22 different flow triggers and they all have one thing in common - **Flow follows focus**. The state can only arise when all of our attention is directed at the present moment. The 22 flow triggers drive attention into the now.

From a neurobiological perspective, these triggers drive attention by pushing dopamine and/or norepinephrine to **increase focus**, or they lower cognitive load, the weight of all the things we may be thinking about. **Lowering cognitive load** also liberates energy that the brain can then use to focus on the task at hand. The 5 intrinsic drivers discussed earlier do double duty as flow triggers as well.

However, if all of the intrinsic drivers are not properly stacked, their misalignment becomes a persistent form of **anxiety**, which is the psychological weight of not doing exactly what we came here to do. Alignment lifts that burden.

As a flow trigger, mastery requires some fine-tuning. It is referred to as the **"challenge-skills balance."** The idea is straightforward: Flow follows focus, and we pay the most attention to the task at hand, when the challenge of that task slightly exceeds our skill set. We want to stretch, not snap.
When we are pushing on our talents and advancing our abilities, we are walking the path to mastery - and the brain notices - and rewards the system with dopamine, enhancing focus even more, thus increasing our chances of getting into flow, and the cycle continues.
As this cycle continues, what used to require energy and exertion begins to happen automatically, **seeking that challenge-skills sweet spot becomes a habit.** Walking the path to mastery has now become a habit that can lead us to the impossible.

Carve out 15% of your life and call it **your autonomy time.** Use that time to push your challenge-skills balance. Chase the high of incremental improvement. Try to get a little better today, try to get a little better tomorrow. Repeat, repeat, repeat.

The 5 intrinsic drivers are biologically related, designed to work together in sequence, and when done correctly produce **FLOW** - we go farther, faster. We are all designed for optimal performance. This is how the system **WANTS** to work. It is crucial to get our biology working for us rather than against us.
Disconnection from meaningful values and meaningful work are major causes of anxiety and depression.

Chapter 4 - Goals

Goal Setting 101

If intrinsic drivers are about creating the psychological energy required to push us forward, **goals** tell us exactly where we want to go. We want to break up our mission statement into smaller chunks, dividing up the impossible into a long series of difficult but doable goals that, if accomplished, render said impossible more probable.

In the 1960's, Gary Latham and Edwin Locke fleshed out Aristotle's notion that the establishment of a goal is one of the easiest ways to increase motivation and enhance performance and that the idea that more stress equals less work performed is invalid. Per their research, goal setting increased performance and productivity 11 to 25%.

The brain is a **prediction engine**, what will happen next and how much energy will be required. Three systems are working together:

Information acquisition
Pattern recognition
Goal direction

We must give the goal direction system a goal -
then you give the pattern recognition system a purpose -
which at the front end of perception gives the information acquisition system targets to acquire.

> Consciousness, from moment to moment, is an extremely limited resource. We have to give it direction - we have to consciously tell it what to attend to.
> If we allow our conscious life to be constantly overloaded with input, much of reality is invisible.
> Fear/survival and goals are the basic building blocks of our reality. However, it is critical that we know our needs, our intrinsic motivations, before we can use the goals as a way of fulfilling those needs.
> Passion, then purpose, then autonomy, then mastery then goals. It is an ordered process.

The Importance of High, Hard Goals

MTP's - massively transformative purposes - core mission statements. These goals are your first filter. You do not spend time on anything that does not advance your MTP's. This filter weeds out the parts of the world that do not matter. MTP's may take a lifetime to fully achieve.

HHG's - high, hard goals are all the sub-steps that can help you accomplish these larger missions. There has to be alignment between your values and the desired outcome of the goal. When you do, there is true commitment, which you will need, because they are hard and may take years to achieve. HHG's need to be challenging, but attainable. Momentum matters. HHG's may take years to achieve.

Clear Goals are all the daily sub-steps required to accomplish your HHG's. They're all the tiny, daily steps to accomplish those HHG's.
These are **daily to-do lists,** which is a set of clear goals for your day. The road to impossible is a well-crafted to-do list, executed daily. Each item originated with your MTP, was chunked down into a HHG, then further reduced to what you can do today to advance that cause. A clear goal is a tiny mission.
Three kinds of goals for three different timescales.

Accomplishing your to-do list is stacking little wins atop little wins on the road to victory via momentum. Clear goals are also important **FLOW triggers** since the FLOW state requires focus, and clear goals tell us where and when to put our attention and thus - focus. A proper clear goal is within your skill-challenge sweet spot, hard enough to stretch our abilities, but not too hard to demotivate you into anxiety.

Try to write your next daily to-do lists at the end of the previous day so you can begin the next day immediately in clear focus. Figure out how many times per day you can push yourself into that skills-challenge sweet spot and make that your goal each day.

After you have completed your to-do list for the day you must turn off and recover for the next day. **Recovery is critical** to sustained peak performance. Knowing how to do just enough, but not overdo it, is a key to long-term success. **You're in this for the MTP** - remember that daily.

Impossible is always and simply - a checklist. Do today, do it again, repeat…..

Chapter 5 - Grit

Grit is motivation writ large - it is the energy needed to push through years of difficult tasks. Without grit, you'll rarely get anywhere worth going.

Intrinsic motivation launches you down the path of peak performance, proper goal setting helps define that path, and **grit is what keeps you keeping on despite the odds and obstacles**.

Grit is the intersection of passion and perseverance. In the brain, the prefrontal cortex controls most of our higher cognitive functions, including "goal-directed behavior" and "self-regulation." Self-regulation is both the ability to control our emotions and the ability to persist through challenging, strenuous tasks.

People who have trouble with grit have a higher amount of spontaneous "resting state activity" in their right dorsal medial prefrontal cortex. Grittier people have less. As we attempt and accomplish hard tasks, dopamine is the reward. Over time, the brain starts to connect the feeling of persistence with dopamine.
Once this becomes a habit, we can dig deep without thinking about it, thus circumventing that part of the brain completely - no resting state activity required, no negotiations for our time and effort. We have become grit. It is who we are.

How do you train up these resilient reward loops?

The Grit to Persevere

Per Angela Duckworth, what matters most to become a high achiever is passion and perseverance - that this combination is twice as important to academic success as innate talents and IQ.

Less gritty people hunt happiness through pleasure, while **grittier folks** choose engagement - seeking out challenging tasks that have a high likelihood of producing FLOW. By constantly choosing engagement and triggering flow, the grittier folks are actually getting more happiness, not less. Thus, while grit requires more energy and emotional fortitude in the short run, it

produces a much bigger mood and motivation in the long run, and it feeds upon and adds to itself every day, all through a lifetime.

Willpower
Willpower is self-control, the ability to resist distraction, stay focused and delay gratification.
It is also a finite resource, and tends to decline for everybody over the course of the day. Peak performers fight back with scheduling. Starting each day with the hardest tasks can be critical to success.
To reset willpower midday, eating well, naps, meditation and exercise can all be helpful. They can reset our physiology and neurobiology and also shift our emotional state.

Mindset
Mindset refers to our attitude about learning. People normally have either a:

Fixed Mindset - you believe that talent is innate and no amount of practice improves
Growth Mindset - you believe talent is merely a starting point and practice is a key to improvement. For sustained perseverance, a growth mindset is indispensable. When faced with complicated challenges, they work harder, longer and smarter, deploying a much wider range of problem-solving strategies and have a much easier time getting into flow.

You cultivate a growth mindset by being curious, asking questions, and wanting to understand things better. From this, **over time, you uncover how you learn best.** Once you believe you can learn, you become curious about other things to learn - you become a growth mindset.

Passion
Passion matters in a discussion on grit because there's no way to persevere years on end.
Early-stage passion doesn't look like late-stage passion. It looks a lot like very focused curiosity.

Passion isn't always pleasant - it often feels like frustration on the inside and looks like obsession on the inside. Peak performers must learn to tolerate enormous amounts of anxiety and overwhelm. A growth-mindset allows us to see this tolerance for negativity as a sign of victory. **It helps flip the script,** forcing the brain to reframe pain as pleasure.

Every time you ignore the frustration, delay gratification, and cross an item off your list, that's a little win. Passion produces those little wins.
The ecstasy of FLOW redeems the agony of passion. If FLOW is our reward for perseverance, because flow is such a gargantuan reward, we're willing to tolerate a lot of pain along the way.

Training perseverance is best accomplished through the **physical** - regular exercise, sports activities, long walks, swimming - whatever. But be sure to push yourself, and push yourself weekly within a perceived challenge-skills sweet spot. Set goals, collect data, move forward daily. But do something daily. **Being gritty needs to become your default mode.** When in doubt - move forward, do the work.

Controlling Thoughts

If you want to be your best, your inner monologue needs to support the best you want to be. Without the grit to control your thoughts, the boredom and frustration that come with every routine will quickly spiral downward. If passion and purpose become a prison, petty frustration can morph into blind rage.

Mental Hygiene

Self-Talk

Positive self-talk is the place to start. Per Michael Gervais, “There are only two kinds of thoughts, those that constrict us or those that expand us. Negative thoughts constrict, positive thoughts expand - and you can feel the difference. You’re looking to expand. Positive self-talk is about choosing those thoughts that **provide a little more space**.”

Positive self-talk leads to positive emotions, which expand perspective, giving us the ability to create novel action plans beyond our normal routines - **you’re expanding the process and yourself, becoming more unique**. These novel action plans also alleviate the boredom and frustration that come with check-lists. This is also why you should always “prepare to pivot.”

Positive self-talk should always be grounded in reality. Remember who you are, what you’ve accomplished in life, problems you’ve solved, hills and bridges you have already conquered.

Gratitude

When we are tuned toward the negative, we miss the novel. Novelty is the foundation for pattern recognition and, by extension, the basis of creativity. **No creativity, no innovation**; no innovation, no impossible.

A daily gratitude practice alters the brain's negativity bias. It changes the amygdala’s threat detection filter, **essentially training it to take in more positive information.** It can be done anytime - find the best time for you.

Write down ten things you are really grateful for and consider them with due thought, or write down three things you are grateful for and expand one into paragraph form. As little as three weeks of this daily ritual can initiate rewiring in the brain. There is a direct link between a daily gratitude practice and a high-FLOW lifestyle.

Mindfulness

There is a little gap, no more than a millisecond, between the moment a thought arises and the moment our brain attaches an emotion to that thought.

Once that feeling is attached, especially if it is negative, there is usually too much energy in the system to shut it down. But if you can get into that gap between thought and emotion, you can replace a bad thought with a better one, neutralizing the stress response in the short-term and reprogramming the brain in the long term.

Mindfulness is a cognitive tool. By observing your thoughts as they arise, you will start to notice the gap and soon discover the simple act of noticing gives you freedom. Once there’s space to move, there’s freedom to choose, and you can become ACTIVE rather than REACTIVE.

There are two options to mindfulness: single-point mindfulness and open-senses meditation. For **single-point mindfulness**, practice long, slow breaths with equal length inhale and exhale to balance the sympathetic response (fight or flight) with the parasympathetic response (rest and relax). This should calm you quickly and calm yields focus. As little as five minutes per day can reduce stress and lower anxiety. This will heighten convergent thinking, so creatives might try **open-senses meditation** which is simply paying attention to everything flooding into your brain (sitting in nature works extremely well. Watch the show; don't engage. This should heighten divergent thinking.

Both approaches retrain the brain, teaching it a simple lesson: we are most effective at dealing with life's challenges when we're **aware, observant, nonreactive and non-judgemental.**

The Grit to Master Fear

Fear is the most fundamental of emotions. We all feel it. It's what we do with it that makes the difference. Fear is a fantastic motivator, which is why learning to treat fear as a challenge to rise toward rather than a threat to be avoided can make a profound difference in our lives. This approach takes our most primal drive, the need for safety and security, and **gets it to work for our benefit.**

Fear drives attention, focus and does it for free. And when we drive through the fear, what we learn - we never forget.

Fear is a constant in peak performance. **If you don't learn to work with it, it will work YOU.**

Per **Kristen Ulmer,** when you are fearful, spend some time not focusing on it with your mind but feeling it with your body - which is very different. Embrace it, treat it like a friend, ask it what it's trying to really tell you. If you do this, you'll find fear is not as nearly unpleasant as we thought. **It's our attempt to avoid the fear that's so uncomfortable**. But once you actually put your full attention on the sensation of fear, it dissipates. Then look at fear as excitement, or as an emotion designed to help you focus. Treat fear like a playmate. This transforms the emotion from a problem to be solved into a resource to be savored.

Science shows that are only **two ways** to confront fears:

Systematic desensitization - building up a tolerance slowly

Flooding - go all in at once

Physical, emotional, intellectual or social risks are all valid and common and will suffice to work on fears you may have. Social and physical risks are processed by the same brain structures.

Learning to create space between thought and emotion is how you learn to play in hostile, rugged, and stressful environments. **The goal is to become comfortable with being uncomfortable**. The unpleasant sensation may remain, but our relationship to that sensation has been permanently recalibrated, and that's what we are really after.

Fear As A Compass

For peak performers, fear becomes a directional arrow. The best of the best will often head in the direction that scares them the most. Why? Focus and FLOW. Fear amplifies attention and

this translates into FLOW, which helps us push through the fear and rise to bigger challenges. Call it the fear-flow loop and we are teaching ourselves to remain psychologically stable and in control even in situations that feel unstable and uncontrollable. **When all is chaos, we drop into FLOW.**

The Grit to Be at Your Best When You Are at Your Worst
Per John Waitzkin (international chess master at the age of 16), “The grit that matters most is learning to be at your best when you’re at your worst. This is really the difference between elite-level performers and everyone else (which one is your goal?). You have to train this kind of grit on its own, as a separate skill. But, if you can do this, what you discover is real power. And it’s a power you probably didn’t know you have”.

In **sports**, try training overall body balance when you’re exhausted using a balance board. For **cognitive** skills, practice a “speech” in your head about a topic you’ve been studying and do it at the end of the day or when tired - just run through it without pause. With **creativity,** you must practice the creative process when tired, see it as an offering, force yourself into flow by tuning out the world and tuning into yourself. See exhaustion, in all its forms, as an opportunity to become grittier, tougher, more unique than most people. Most people just quit when they’re tired - the human default mode. Is your goal to be like most people?

The Grit to Train Your Weaknesses
Per the Greek poet Archilochus, “We don’t rise to the level of our expectations, we fall to the level of our training”. In all of our endeavors, there are always a few weaker links in the chain - **always**. And these potential fail points become actual fail points once the pressure gets turned up.
Fear is the issue. In times of strife, the brain limits our choices to speed up reaction times - fight, flee or freeze. Yet the same thing happens to a lesser degree under any high-stress conditions. And the responses we fall back upon under duress are the ones we’ve fully automated - those habitual patterns we’ve executed over and over again
Just as importantly as training those weaknesses, we have to be able to identify them without our personal biases - it’s trickier than you think. Ask people you trust to help with this. Tell them to list your top 3 weaknesses as they see them and to be honest. Be sure you are ready for this honesty - if you’re not ready to move forward by uncovering and training weakness, you will not enjoy the input nor do anything positive with it. However, it is one of the keys to becoming more unique - admitting where you really are, so you can move forward.

Chances are the items you find will fall into three categories: **physical, emotional, and cognitive.** As you set up goals to work on these weaknesses, prepare to be uncomfortable. Uncomfortable is good - accept it as the gift it is, refrain the context in your mind.

From a cognitive perspective, ask yourself these two questions:
What did I believe 3 months ago that is not true today?
What kind of thinking error did I commit to arrive at that erroneous conclusion?

We have blind spots, biases, that lend our mistakes a certain cognitive consistency. Cognitive weakness, as all weaknesses, tend to have root causes. **By identifying and training the root causes that network together in your mind, you can erase whole categories of weakness at once.** These networks are also the base networks of our fears, which in reality, is a huge part of our weaknesses. A fear-weakness loop.

The Grit to Recover
Burnout is identified by three symptoms: exhaustion, depression, and cynicism. It's not necessarily the result of working long hours, but rather the result of working long hours under specific conditions: high risk, a lack of sense of control, a misalignment of passion and purpose, and long and uncertain gaps between effort and reward. These are all conditions that arise during our pursuit of high, hard goals. **Burnout costs you both motivation and momentum**. In the short run it reduces cognitive function, in the long run it causes permanent neurological effects from problem-solving to memory to emotional regulation. Being in a chronic state of burnout, you literally become someone else - which is not you. not your best you. And you certainly can't become the YOU that you are trying to become.

It's hard for peak performers to relax - on some level it feels counterintuitive. Feelings can tend to be that way, of course - incorrect and illogical. Since burnout leads to decline in cognitive function - one of the most common enemies of sustained peak performance - you HAVE to be gritty about recovery.

Real recovery is active and requires shifting brain waves into the alpha range first, the delta range later when sleeping. Screen time does NOT promote this - it pulls the brain right out of alpha waves into beta waves. **Limiting screen time** is a fast and efficient trigger into Flow states.
The accumulation of screen time is not your friend.

Three Thoughts
1. Protect your sleep - 7-8 hours, chronically, rhythmically, consistently. No negotiations here, just do it. Sleep hygiene is the base from which all good things flow.
2. Put an active recovery protocol in place - Try long walks in the woods, yoga, epsom salt baths or sauna. Do these things often, 2-3 times per week. Active recovery protocols lower stress hormones.
3. Total resets matter - Most people need 2-4 days completely off the grid every 8-12 weeks. Find out the pattern that works best for you. Off the grid. Completely off. When you are off the grid, remember how that feels, how you think. You need a portion of that off the grid time daily.

Once you realize burnout has set in it will take WEEKS to get you back to baseline levels. Remind yourself of that waste of time. **The trick is sustained momentum without burnout.** It's one of the arts of learning your tendencies and training yourself to find the most effective and efficient patterns to keep you in peak performance mode - right to the edge of the red line - but not over.

Lastly, you will find that this line changes from week to week and year to year. Be cognizant of it every week as you assess the week that has passed and you plan the week to come. Type-A's are their own worst enemy. **Know thyself.**

Chapter 6 - The Habit of Ferocity

Excellence always has a cost. On a daily basis, if your goal is greatness, then you're going to put just about every available hour toward that goal. So what really sets impossible stalkers apart?

1. **The size of their original vision**. You have to dream big. If you've turned curiosity into passion and passion into purpose and used that to sculpt a massively transformative purpose, you're already on the path to mastery - keep walking.
2. **The amount of FLOW in the equation**, one of the keys to long-term perseverance. All the steps in this primer process have been built around FLOW triggers - keep walking.
3. **The habit of ferocity** is the ability to immediately and automatically rise to any challenge, to instinctively lean in. In fact, evolving to the point where you lean in before you even think about leaning in.

Anxiety, inside an fMRI image, looks like OCD. A small network, a tight thought loop, the brain running circles around itself, with no way to stop and no new solutions. The habit of ferocity pushes through this thought loop, automatically looking for novel solutions and diminishing the anxiety/fear which is a prime barrier to excellence.

Impossible is not easy. But the habit of ferocity allows you to take all the energy that comes from suffering and turn it into fuel. Most people, when encountering obvious obstacles, turn to the default mode to conserve energy - which is biology. However, its insidious cousin jumps on for a ride - sloth. When in doubt, no solution? Quit. Give up. Scroll some social media, find some relief from the anxiety in your head. **The habit of ferocity runs right through that obstacle, accelerating all the way.** It has to become your new default habit. It is not easy to train yourself to be more than your default modes, but you can, if your dream is big enough.
Figure out what you would die for, then live for it.

"Sow an action, reap a habit, sow a habit, reap a character,
sow a character and you reap a destiny."

The habit of ferocity helps us maximize our **16 hours each day**. Every minute not wasted in thought and anxiety loops is time spent accomplishing goals and moving us closer to our impossible. Also, time not spent in anxiety lowers total cognitive load, saving energy for the important tasks at hand. You'll chronically have more cognitive and emotional fuel to attack each day.

Part II
Learning

"How we spend our days is, of course, how we spend our lives" - Anne Dillard

Chapter 7 - The Ingredients of Impossible

If you're hunting for high achievement, motivation is what gets you into the game, but learning is what keeps you there.

Per psychologist Gary Klein, the eight types of knowledge that are visible to experts yet invisible to everyone else:
Patterns that novices don't notice
Anomalies or events that didn't happen or events that violate expectations
The big picture
The way things work
Opportunities and improvisations
Events that have already happened (the past) or will happen (the future)
Differences that are too small for novices to detect
Their own limitations

Without the knowledge on Klein's list, the impossible remains impossible because the items on the list are literally the ingredients of impossible. They are the requisite knowledge base - but developing this base requires LEARNING. A ton of learning. **Lifelong Learning.**

Lifelong learning is how we keep pace with the moving target that is the challenge-skills sweet spot. It is the bedrock foundation of a high-flow lifestyle.

Learning is an invisible skill. The major neurological mechanisms of learning - **pattern recognition, memory consolidation, network construction** - are by design, invisible, and beyond our conscious day to day.

So the question is, how do you improve what you can not see?

Chapter 8 - Growth Mindsets and Truth Filters

If you want to amplify and accelerate a learning process - learning anything - you need to start with the right equipment: **a growth mindset and a truth filter.**

Without a **growth mindset**, learning is mostly impossible. We need to believe learning is possible. Believing alters our underlying neurobiology, setting the table for acquisition of

learning. Crucially, a growth mindset helps you see your mistakes as opportunities for improvement rather than condemnations of character - you will go farther faster and with less emotional turmoil along the way.

The right **truth filter** helps us to assess and evaluate what is being learned. This is critical in the process. Learning the wrong things, purposeful lies and misdirections is so much worse than learning nothing at all. You need a system in place for fast and accurate information evaluation.

When you ask four experts their thoughts on an idea, you may very well get all three to agree. When you ask five experts, however, your odds increase that one of them will disagree. If so, talk to five more experts. Be cautious of dominant trends of thought in any field. The **five expert rule** takes time but it is time well spent if you want to head down the path of truth

First principle thinking, a reductionist truth filter, originates with Aristotle who described “first principles” as “the first basis from which a thing is known.” I call them “Genesis Ideas” which will lead to the “Genesis Questions” you need to ask when learning, solving problems, and wrapping your brain around the “why” of a problem or process.

We tend to ask the wrong questions if we don’t dig deep, and from that deepest dig we can then expand to high altitude/wide angle analysis. It’s using the brain to converge and then diverge, often many times over the course of learning - and remembering all the thoughts you had along the way. We’re building the learning tree, that was discussed previously, with first principle thinking. You need a strong, wide root system to build that tree.

We’re asking the wrong questions, so we’re playing the wrong game,
and then we wonder why we are where we are?

You can’t get to impossible with bad information. The truth filters of - first-principle thinking, the scientific method, Kotler’s five expert rule - can all assist in your quest for true information. Feel free to use them all or develop your own. Be advised - truth is a willy animal. It won’t be found easily.

Being able to trust in the information you’re working with also **lowers anxiety, doubt, and cognitive load which improves focus**, gets us into FLOW easier and thus increases learning speed and depth.

Chapter 9 - The ROI on Reading

From which sources, exactly, should we try to learn? Make non mistakes, this is a mission critical question.

A few years back, the Pew Research Center reported that nearly one quarter of American adults had not read a single book in the past year. Not - one - book. And we wonder why we are where we are.

The main excuse for not reading a book is that it's too much of a commitment. However, think of the value proposition here. You give an author your time in exchange for their ideas. B**ooks are the most condensed form of knowledge you can use**. Always will be.

The breakdown or your time (at 250 words per minute) invested and the time spent by the author:
Blogs - three minutes of your time - 3 days of theirs
Articles - twenty minutes of your time - four months of theirs
Books - five hours or your time - 15 years of theirs

Talks and documentaries are great for igniting curiosity - hugely important in your quest for the impossible - but neither approaches the information density of books. Why? You're missing the details. By definition, the above mediums have to skip some details, condense ideas the author may have wanted expanded and vice versa. **These mediums filter the author's message and your brain may miss the golden nuggets of ideas they were meant to discover.** It's the medium dictating terms to the message.

Books also pay **performance dividends**, improving long-term concentration, reducing stress, and staving off cognitive decline. Reading also improves empathy, sleep and intelligence.

Books are where they keep the secrets. Open one. The universe as we know it, and the universe as we will eventually know it, is inside.

Chapter 10 - Five Not-So-Easy Steps for Learning Almost Anything.

Step 1: The Five Books of Stupid

At first, learning makes us feel stupid. You need to feel this frustration in order to produce the neurochemical norepinephrine, whose prime function is to prime the brain for learning. **Frustration is the cue you're moving in the right direction, not the wrong direction**, so reset your context here.

The main goal of the five books is to become familiar with terminology. Through the first three books, a lot of what you're reading you won't understand. Don't stop. **We're priming pattern recognition**, and it's happening on an unconscious level. As you keep reading, bits of information get stitched together into bigger pieces, the beachhead on the shores of new knowledge.

Establishing the Beachhead

You need a pen and notebook so you can take notes while reading the five books. Focus on three things:

1. Take notes on the **historical narrative** so that your brain can order the new information and speed learning
2. Pay attention to **terminology.** Write down words that pop up often, look them up, read the definition as it recurs and meaning develops
3. Critically, take notes on things that get you **excited.** Things that speak to your soul, make your jaw drop, questions of understanding. Things that make us curious bring a lot of energy with them. Things that catch our attention, coupled with the process of writing it down, is often enough to lock it into long-term storage during that adequate and chronic sleep cycle you've adopted.

The point of the above is to establish a technical baseline and then to follow your curiosity through a subject, using things you naturally find interesting - and thus have an easier time remembering - as the **structural foundation for future learning.** And remember, this is lifelong learning, so we're building all of our learning trees with wide, deep root systems that will last a lifetime.

How To Choose the Five Books

Book 1 - Start with the most popular, best-selling book you can find on the topic. This book is about **fun and gaining a little familiarity** with the world you are about to enter and a basic sense of its lingo. If you're not excited to read this book, you might rethink your choice of subject and/or book.

Book 2 - Also a popular book, but usually a **bit more technical.** The main goal here, once again, is to generate excitement. Firing up your imagination is mission critical at this point in the process.

Book 3 - This is the first semi-technical book, still readable and interesting, but maybe not quite a page-turner. This book builds on all the ideas learned previously, layering in more precise language and expert-level detail. **This is where you get the shadowy outline of the big picture.** Begin thinking of the macroscopic perspective on the subject.

Book 4 - The first actual hard book - something that gives you a taste of the kinds of problems that real experts in the domain are thinking about. **Pay attention to the field's current borders.** Get a sense of the when, why, and with what foundational ideas contemporary thinking about a subject begins and ends. Figure out the crazy lies: the stuff that the experts feel is

balderdash. Use caution here. You may not agree with these opinions - and it's important to believe **you don't have to** - but you need to know they exist, and more importantly, why they exist.

Book 5 - This book may be the hardest to comprehend. This is a book about the **future of the topic,** where it's heading, and when it's heading, a book that gives you a sense of the cutting edge.

After these five books, your brain typically has enough data to give a feel for the field. The language is familiar and the macroscopic big picture has snapped into view - **the point where real comprehension begins**. When you can start meaningful, articulate questions, then you can feel confident you've learned the basics.

This is an exercise meant to help you learn subjects, not skills. You can't read your way to skill proficiency - that comes later. **This is knowledge acquisition.**

Although five books may seem like a lot at first thought, it's definitely not. Five books is less that one would read in the first half of any course in college. The better genesis question is, "Are you really curious to dive deep and learn more about this subject?" If you are, this is the path. The second genesis question then is, "Are you willing to get started?"

Trust me on this point. If you are truly, deeply curious - just get started. You will be amazed where it leads you. And once you've learned how you learn? The universe will open its doors for you willingly. But you have to do the work. You have to get started. Quit thinking about the length and effort of the path. **Just take the first step**.

Step 2: Be The Idiot

Past the five books, your notebook should be filled with questions. Review them. Many will now have answers. The ones that remain? That's the raw material to carry into the next step in the process: **seek out experts to talk about those questions**.

You have to l**eave your pride at the door** and seek out and talk to people that are smarter than you are. Ask them to explain things like you were four years old. When experts start to tell you you're asking good questions, you're on the right track.

Interviewing is a skill. Have a list of questions prepared and assume you will get no more than thirty minutes of their time. Make sure you've investigated them and their talks, books and technical papers ahead of time. Make sure your first few questions display both personal knowledge about the person you're interviewing and general domain knowledge about their subject - this makes them interested in talking to you. Take notes, record the conversation if you can.

Step 3: Explore The Gaps

After the five books, and then asking intelligent questions and talking to experts, you'll start to notice blank spots in the answers. Occasionally, **these spots are central questions in the field**. In other words, you've followed your curiosity to the same place that most researchers follow their curiosity.

What you're after now is what Steven Johnson calls a "**slow hunch**," or the sense that the particular bit of information in the field you're now studying is related to some other bit of data in another field you've also been studying. Your curiosity will naturally seed these connections.

If you've been paying attention to the subjects' boundary lines, you'll begin to get a feel for the questions not being asked by the experts. It's time to follow those intelligent questions into the gaps. This won't necessarily work well if someone else is driving the learning bus for you. Someone else's curriculum may have different goals and be tied to a standard exam. As you will see as you work through this process, **how you learn is subjective, personal and continuously expanding.**
Standard curriculums for the masses are then, by definition, insanely stupid. But since the world doesn't really want you to think and learn, these curriculums are deadly effective.

While books form the foundation, in step three, try blogs, articles, talks and the like. Because of specialization, expert knowledge tends to become balkanized over time. As a result, **most interesting topics are usually the ones that get stuck between categories**. These are the gaps. And after you've surrounded a subject, you'll typically end up floundering around in those gaps. **The floundering is what you're after:** it's where slow hunches really emerge. If you suddenly find yourself with more questions than answers, well, that's how it's supposed to work. If you've done this right, because you've followed your curiosity into these spots, suddenly you're struck with burning questions that no one can answer. So you'll end up trying to find those answers yourself.

Step 4: Always Ask The Next Question

The next question is about hunting conflicting answers. Seek out experts who disagree with experts you've already read or spoken to. When you get to the spot where everything you thought you actually knew was actually wrong, then you're in the right place. Now try to solve the puzzle, even though it might not be solvable.

Step 5: Find The Narrative

Our brains are designed to link cause with effect - it's a survival mechanism. If we can backtrack the why from the what, then we can learn to predict the future. This is why the brain loves narrative, which is cause and effect on a larger scale.

When we link cause and effect, it's **pattern recognition**. To reward this behavior, we get tiny squirts of **dopamine.** The brain then begins the process of scouring the recent past for what triggered that reward. Then we start backtracking further, looking for more connections, so we can get more dopamine as we find more connections. As we begin to **construct the narrative and garner social support**, more neurochemicals come into play to solidify and drive the process further as well as cementing the new information into long-term storage. This dopamine's role in learning.

Tell someone what you've learned. Find someone completely ignorant of the subject and verbally explain via narrative what you've learned thus far. If they find it compelling enough to pay attention and you can still convey the story's critical information, you're halfway there.

The second person is an **expert,** to tell you what might be wrong with your narrative thus far. If you can satisfy both people, keep their attention, convey the information, then dopamine is produced further cementing the knowledge. Essentially, up to this level of study, you've learned the material and earned your way to your opinions and should be comfortable with them in public.

By taking things public, the narrative process continues with more cause and effect as you discuss the topic in possibly deeper and wider spectrums. **Most importantly, more neurochemicals show up**: dopamine for the risk-taking, norepinephrine for the excitement, cortisol for the stress, serotonin and oxytocin from the social interaction itself - all together, an incredible tool for **memory reinforcement.**

Beware of two problems that might arise. The first is to finish up those first five books and assume you know something. Five books on a subject is a great foundation, but **don't mistake it for actual expertise**. The second is that if you've followed this five-step process all the way to the end, then you probably, and should, have a huge sense of all the stuff you still don't know. Expect this. Experts often feel dumber about their subject than novices. **They know what they don't know and they know there's a lot they don't know they don't know.**

Don't despair, don't let this cripple you. Those new and additional knowledge gaps are the foundation of curiosity, so follow them onward to more books, more truth-filtered information and continue the process. *Learning is life-long - it's a process, not an event. Keep following that curiosity, keep seeking. What you seek, will be seeking you in return.*

Chapter 11 - The Skill of Skill

There are commonalities to learning anything that help us with accelerated skill acquisition. **Mastering fear** is a commonality shared in almost every learning situation. Calming techniques work equally well learning to surf or playing high stakes poker.

Per Tim Farris, when approaching a new skill, hunt for those **commonalities.** Break the activity apart, deconstructing it into its components. You're looking for the raw materials from which to learn and the common mistakes to avoid. Next, hunt for overlaps, those components that show up across the board. These components provide the most leverage.

Consider the Pareto principle, **the 80/20 rule**, the idea that 80% or your consequences stem from 20% of your actions. As applied to learning and approaching a new skill, focus your efforts on the 20% that really matter.

To identify these component parts, you want to **survey and simplify**. Start by **removing the extraneous**, then decide on what you will initially focus 80% of your efforts on. As you master that component, use it as part of the foundation, and learning tree you are creating, to focus on the next component. Focus 80% of your efforts on that new component, master it, add it to the foundation. Repeat to total mastery.
Every skill has basic components that must be mastered, that are the roots from which your mastery tree is created. The basics must be true and sound and continuously practiced - refreshed. Neglect the foundation - and mastery will be elusive at best and probably unattainable.

Chapter 12 - Stronger

What exactly do you want to be learning?
You need to learn whatever you need to learn to chase your high, hard goals.
You need to learn to accept the unpleasant, to reframe your context of what uncomfortable is and why you have to go there consistently - train your grit.
Now you need to learn to identify your core strengths - literally the things you are best at - then learn to get better at them.

Psychologically - working your strengths increases the feelings of autonomy and mastery, intrinsic drivers. These amp up confidence, focus and engagement which foster learning and FLOW - which further amplifies the entire process.

Neurobiologically - working your strengths produces dopamine - tightening focus and increasing motivation.

Working strengths also enhance **"sensory gating",** which helps the brain decide which bits of information make it to conscious processing and which are irrelevant. You can check out diagnostic tools online to help you reveal your strengths (page 140).

To help you reveal your strengths, think of your **five biggest wins** so far, and then break them down to the different components/strengths that made those happen. Be specific.
Then hunt for intersections, places where they align with your MTP's, big goals and clear goals. Lean on these strengths when developing your clear goals. Then use those core strengths once

a week, in a new way, in an environment that matters. Spend two to three months on each strength, then move to another. **You're looking for the place where multiple strengths directly intersect with your MTP.** Using your strengths on your MTP will increase time in FLOW and you'll go farther faster.

What did you learn? To sharpen your sword. Then usse those strengths to advance your cause, which speeds up the process.

Chapter 13 - The 80/20 of Intelligence

The center of this book is the question of extreme innovation. What does it take to do what's never been done before?

Per psychologist Chris Peterson, **other people matter.** You need social support, love, empathy, caring and connection.

Whenever we encounter something difficult, the brain makes a risk assessment based on the quality and quantity of our close relationships. If you have social support, the brain treats the situation as an interesting challenge, not a threat, therefore **dopamine** is the result. But if you face the situation alone, your likelihood of success decreases, and you get **cortisol** instead, which can crush performance.

Between you and your dreams are other people - always. Your list of skills has to include interpersonal skills such as communication, collaboration and cooperation. You have to develop emotional intelligence (EQ).

EQ is a catchall used to describe our ability to accurately perceive, express, understand, and regulate emotions, in ourselves - and in others. It's personal skills like motivation, self-awareness, and self-control, as well as inter-personal skills such as care, concern, and empathy.

Emotions don't come from any single location in the brain. Instead, they're generated by seven core networks: fear, lust, care, play, rage, seeking and panic/grief. Therefore, **EQ is the cognitive capacity needed to effectively "manage" each of these seven networks**. High EQ correlates to everything from good moods to good relationships to much higher chances of success. Per journalist Nancy Gibbs, "IQ gets you hired, but EQ gets you promoted."

Researchers break EQ into **four areas:**
Self-awareness - knowledge of one's own feelings, motives, desires and character.
Self-management - taking responsibility for one's own behavior and well-being.
Social awareness - the ability to comprehend both the struggles of another person and the broader problems of society.
Relationship management - all of your interpersonal communication skills

Most self-awareness/self-management tactics share one essential commonality: **autopilot awareness.** Somewhere between 40 and 80 percent of what we do is done automatically, mostly unconsciously, out of habit - on purpose and by design. This is the strategy the brain uses to conserve energy - but the wrong habits wreak most of our havoc.

You have to begin to notice the patterns, then stop and give yourself space to consider them. Pause for a breath before you speak, act, or react. In that pause, get clear on your motives. Ask yourself why you're about to do what you're about to do. Be accountable for your flaws, monitor and override negative self-talk and widen your emotional vocabulary. **Being able to describe what you're feeling in increasing detail, and with more precise language, expands your feelings landscape.**
Per Ludwig Wittgenstein, "The limits of my language are the limits of my world."

For social awareness and relationship management, focus on the two skills of active listening and empathy. **Active listening** is the art of engaged presence. It's listening with genuine curiosity, but without judgment or attachment to an outcome. Patience and silence are key with only asking clarifying questions if needed. This also stimulates curiosity and its associated neurochemicals, which in turn increase attention, prime learning and the best chance to connect what we are hearing to older ideas - pattern recognition. All of these processes together become a FLOW trigger.

Empathy, the ability to share and understand the feeling of another is a fast path to EQ. You can train empathy through imagination and meditation.
Imagination means to literally ask yourself how it would feel to walk a mile in the other persons' shoes. Consider it from multiple angles. Try to really feel the resulting emotions, noting somatically where those feelings and sensations occur physically in your body. Crucially, notice how these emotions might color your perspective if you were in this situation.
Compassion-enhancing **meditation** can increase empathy and cause permanent changes in the brain. Find a quiet spot, close your eyes. Bring to mind people in your world who has been kind toward you and for whom you feel gratitude. Wish them well and wish for their safety, happiness and health. Research shows that twenty minutes a day for two weeks will seriously increase empathy.

Combining empathy-imagination exercises with a compassion-enhancing meditation actually changes the neuronal circuits activated by another's suffering, which builds empathy faster.

Chapter 14 - The Shortest Path to Superman

Psychologist Anders Ericsson's **so-called ten-thousand hour rule** suggests talent is a myth. Training is key. To achieve mastery in a given field, his research showed that ten thousand hours of **"deliberate practice"** is required. During this practice time, the learner receives explicit instructions about best methods, has access to immediate feedback and performance results and can repeat the same or very similar tasks. In short, he argues for early specialization

and extreme repetition. This also spawned an industry of specialization advocates: tiger moms, helicopter parenting, take your pick. The problem is, that over time, we have come to realize that early specialization hasn't produced anything close to the expertise it was designed to create. With children - it causes them to quit. With adults - it makes them narrow-minded and over-confident, essentially blind to most facts and too dependent on the few facts they do know.

There are **three major challenges** to the ten-thousand-hour rule:

1. Ericsson's research was conducted on violinists, and he admitted the results did not apply to every field - regardless of how others interpreted his findings. Also, ten-thousand hours were an average tally of an arbitrary marker. Using it as a hard and fast metric for expertise is **not justified** by his findings.
2. Action and adventure sport athletes, chronicled in the book *The Rise of Superman*, accomplish more impossible feats in less time **by not using any of the rules** normally associated with peak performance at the time. These athletes shared none of the traits that up to that time were considered essential to excellence and achievement. They came from broken homes - nurture, they rarely engaged in deliberate practice via rote repetition and rarely showed the ability, if ever, to delay gratification. Yet, despite not following the traditional rules, they rewrote the rulebook on human possibility.
3. Lastly, the **challenge of specialization** comes from David Epstein. He found that most top performers start their careers with a wide "sampling period", eventually finding their own personal "match quality" - a very tight fit among skills, interests, and the work you do. That zig-zag path between curiosities leads them to those things that they love to do. As from previous thoughts in this book, you then get the turbo-boost, higher learning rates and a better predictor of sustained peak performance. Per Epstein, "When you get fit, it looks like grit."

From before, the **passion** exercise was simply a long sampling period that emphasized learning through doing. We learn by doing - you can not predict what you will be good at. Life is best revealed in the living.

Big-picture: match quality is a sign that our five foundational intrinsic motivators are properly stacked - curiosity, passion, purpose, autonomy and mastery. This heightens attention, which means we are making choices about how to spend our limited energy each day, each moment, and filtering out everything else from the world that is not.

More FLOW

To accelerate towards mastery, you have to amplify learning and memory. The more neurochemicals that show up during an experience, the better chance that experience moves from short-term holding to long-term storage. They tag the experience as important - save for later. Spending optimal time in FLOW, **can cut the time to mastery in half**. The road to impossible is shorter than we previously believed.

When FLOW is the reward, learning shifts from something done consciously, with energy and effort, to something done automatically, out of habit and joy. It's the habit of ferocity applied to

learning. **If we can automate this whole instinct,** from the first spark of curiosity that ignites the adventure through the rush of mastery that is its never-ending conclusion, then we're constantly feeding our passion and purpose. This is what allows us to play the infinite game. If you keep learning, you keep playing. And if you play for years on end, you may very well exceed your imagination, which is why it's called **the infinite game.**

Part III

Creativity

I don't do drugs. I am drugs - Salvador Dali

Chapter 15 - The Creative Advantage

What skills do our children need to thrive in the 21st century?
The old answer was the three R's - reading, writing and arithmetic.
The new answer? The four Cs: creativity, critical thinking, collaboration, and cooperation.

Per **Adobe's State of Create**, a 2016 comprehensive survey of over 5000 adults in the USA, UK, Japan, Germany and France, not focusing on a single industry, asked the question, "How critical is creativity to society"?
Creatives are more fulfilled, motivated and successful.
Companies that invest in creativity surpass their rivals in revenue growth, market share, competitive leadership, and customer satisfaction.
Creatives report they are 34% happier than non creatives, which should make us rethink how we deal with depression.

The bigger the dream, the less visible the path. In the infinite game of peak performance, motivation gets you into the game, learning allows you to continue to play, but creativity is how you steer.

Creativity Decoded: Part One

Many ancient cultures lacked a word for creativity. They thought of creativity as "discovery", because ideas came from the Gods and were merely "discovered" by mortals.
This shifted during the Renaissance of the 18th century, with the concept of "imagination" being developed, **"the process of bringing to mind things without any input from our senses."**

At the turn of the 20th century, Henri Poincare', a French polymath, expanded this concept into a process. He proposed that insights didn't arrive out of nowhere, rather they followed a reliable cycle. Graham Wallace, an economics professor, agreed and published *The Art of Thought.*

The process:

1. Preparation - a problem is identified and the mind starts to explore its dimensions.
2. Incubation - the problem gets passed from the conscious mind to the unconscious mind, and the pattern recognition system begins to chew on the problem.
3. Illumination - an idea bursts back into consciousness, often through the experience we call "insight".
4. Verification - this new idea is consciously reviewed, tested, and applied to real-world problems.

In 1927, the philosopher Alfred North Whitehead gave this cycle a name - "Creativity" - which became a household word in 1948 when advertising executive Alex Osborn published his bestseller, *Your Creative Power*.

Then, **psychologist J.P. Guilford** pointed out that researchers had completely ignored the idea of "creativity". Prior to this, Guilford had help pioneer the field of intelligence testing (IQ), and he noticed that creatives often scored lower on IQ tests, not because they couldn't solve the problems, but because their approach to the problems created multiple solutions. He coined a term for this process - **divergent thinking** - which is an anti-systematic approach to problem-solving, open-ended, definitely not logical. IQ tests had been designed to measure its opposite, **convergent thinking**, where we converge on an idea, proceeding by logical steps, narrowing our possibilities as we go.

However, he also found that divergent thinking wasn't entirely free-wheeling. It had four core characteristics:

Fluency: the ability to produce a great number of ideas in a short time frame

Flexibility: the ability to approach a problem from multiple angles

Originality: the ability to produce novel ideas

Elaboration: the ability to organize those ideas and execute on them

These characteristics made creativity a quality that was measurable and also the accepted definition of creativity: **"the process of developing original ideas that have value**."

In the 1960's, research into split-brain patients revealed functional differences in the hemispheres. Language and logic seemed to live on the left; the right was symbolic and spatial. At that point, researchers thought they had the answers: creativity is a process that has a 4-stage cycle and relies on four characteristics of divergent thinking.

Then the neuroscientists showed up, and most of the story changed.

Creativity Decoded: Part Two

Neuroscientists have learned since that creativity isn't one thing, and it often does not fit the known patterns, in the known order of process or in the established timescales.

What do brains do?

1. **Brains turn information into action**. They gather information, both from the senses and from internal thoughts and feelings, then turn it into action via the muscles, preferably as energy efficiently as possible. Human brains have space between sensory input and motor output. Unlike animals, we have lots of options, we an make choices, we can repress instinctive behavior,
2. The forward portion of the cortex, our prefrontal cortex, **can run simulations**. We can time travel and experiment with other possible futures and pasts. It can ask: What could have been? What if? What might be? Creativity is always about options and then action plans and is an invisible skill.

If our creative explorations produce the same old actions plans - we are being instinctive, efficient but not creative.
If we're producing novel action plans, we're creative, but not necessarily efficient.
But if we're producing novel action plans that are also efficient (useful and valuable) we've arrived at the now standard psychological definition of creativity - **"The production of novel ideas that have value."**

We have learned that creativity is a **recombinatory process**. It's what happens when the brain takes in novel bits of data, combines it with older information, and uses the results to produce something startlingly new. This recombinatory process requires the intersection of three overlapping neural networks, and if we can understand how they function, we can augment their effects, thus training up creativity.
The neural networks are: **attention, imagination** and **salience.**

The Attention Network

To take in novel information we need attention. Per psychologist William James, "My experience is what I agree to attend to. Only those items that I notice shape my mind - **without selective interest, experience is an utter chaos."**

The **executive attention system** governs selective interest or what is sometimes called, spotlight attention. This is what we use when we need laser focus to make decisions and ignore other input.

There are **five regions** of the brain that comprise this network. Their functions are to:
From the senses - regulates instinctive behavior and "dims" everything else, thus the spotlight attention on one thing while others are reduced.
Then, there is error correction - does the input match the prediction. If it doesn't, you are incented to consider a novel idea. Also, part of the brain helps us keep eyes locked on target, allows goals to be integrated with attention and allows novel action plans.
Then, the information thus far is parked in a short-term information area while we gather more info and consider next steps.

While this is happening, part of the brain helps us make decisions by doing risk assessment and social cognition and calculations.

The Imagination Network

This network, or more formally the **default mode network**, is all about spontaneous thought. This system is active when we are awake but not focused on anything in particular - about 30% of the time.

There are **four regions** of the brain that comprise this network. Their functions are to:
One region controls our ability to think about what others are thinking about and creative self-expression.
The next two regions help retrieve personal memories that you can use to help make decisions based on what is happening at the moment. These two also handle self-consciousness and random thought generation.
The last region allows us to integrate various internal thoughts into more coherent wholes, gathering all the data generated into a single idea.

However, under normal circumstances, these networks don't work together. The executive attention network and the default mode network operate in opposition. The activation of one causes the deactivation of the other - **but not with creatives**. They can keep both systems active at once and shift back and forth between them with far more fluidity than most.

When both of these networks are co-activated, we can perform **the three Bs:** bend, break, and blend - the skills beneath creativity. Co-activation allows us to bend what we see, break apart what we sense and blend it all back together in a new way. The last network allows the shifting back and forth and controls the whole show.

The Salience Network

Salience, as a term, refers to **noticeability**. Objects have physical salience because of color or intensity and also emotional/personal salience based on our experiences with it. This network, then, notices this noticeability. It works like a giant information filter, monitoring incoming data and tagging it as important or irrelevant. And it monitors both the internal and external world, which is part of the reason this network is so critical for creativity.
Our **internal world** is murky, not always clear, and are subtle and often in conflict with more attention-grabbing inputs from the external world. This network is what alerts you to the fact that the idea that just bubbled up is a good one and worth your attention. It is the master switch for switching between default mode and executive attention, thus, the **gateway** to heightened creativity.

Two more brain regions anchor this network. Their functions are to:
The first plays an important role in self-awareness. It takes signals from your body and the environment and uses the most important results to make decisions.
The next region is responsible for error correction or two kinds - cognitive errors and emotional errors.

Three other regions are also key to this network. Their functions are to:
The first handles threat detection, noticing anything new or novel, especially new and novel dangers.
The last two are involved with motivation and reward. These drive behavior, reinforce behavior, and provide feel-good neurochemicals to accomplish these tasks.

In the brains of creatives, all of these areas function differently than in other people. Most people have an active **"repetition suppression",** which is the automatic suppression of familiar stimuli. Creative people do not have this tendency. For them, in the real world, they have the ability to notice the new in the old.

To train up creativity, you have to train up all three of these networks. Per psychologist Scott Barry Kaufman, **"For optimal creativity**, you want multiple brain networks to be firing on all cylinders, flexibly ready to engage and disengage depending on the stage of the creative process."

Chapter 16 - Hacking Creativity

The term hacking, here, when used to describe an approach to peak performance, is really saying "figuring out how to get your neurobiology working for you rather than against you." This has been the approach of this book from the beginning. Now we turn to seven ways to increase creativity,

One: Befriend Your ACC

When considering creativity, one of the most frequent topics is the phenomenon of insight, that **aha moment** when you solve a puzzle or a novel idea drops into consciousness. Until the beginning of the 21st century, this has mostly been a mystery, until functional MRI (fMRI) was used with EEG to try and solve it. Mark Beeman and John Kounios gave subjects a series of remote association problems - insight problems - and used the aforementioned technology to monitor the subject's brains. They found that right before people solved the problem there was heightened activity in the **anterior cingulate cortex (ACC**).
Per Kounios, "The brain can't use two different strategies at once. Some are strongly activated and some are weak and only remotely associated - odd thoughts, long-shot ideas - the creative ones. When the ACC is activated, the brain switches to these nonobvious, weakly activated ideas. That can be an aha moment."

Should we find anything interesting in the default mode network, the ACC then switches it off and switches on the executive attention network to consider the idea in more detail.

What lights up the ACC? A good mood. If an active ACC is the ready condition for insight, then a good mood is the ready condition for an active ACC. When we are in a good mood, we feel safe and secure, more apt to take risks, and give the ACC more time to pay attention. Bad mood? Amplifies analytical thought.
Four practices done chronically, daily, will help elevate mood and also a way to solve multiple problems at once and turn the novel into something useful.

Gratitude - previously discussed. Focus on the positive. This not only impacts mood but increases the breadth of novelty in your day. Novelty is the starting point for creativity
Mindfulness - previously discussed. Teaches the brain to be calm, focused and non-reactive, thus putting some space between thoughts and emotions and more time for the ACC to do it's job. WIth creativity, use open monitoring - allow thoughts and feelings in without judgment - and let the salience network do its job.
Exercise - Lowers stress levels by flushing stress hormones (cortisol) while increasing feel good neurochemicals (four of them). This lowers anxiety, augments the good mood and amps up the ACC. It also provides a time out from your day for an incubation period, as previously discussed.
Good Sleep - Increases overall energy levels, helps us feel safer and willing to take risks. Most importantly, sleep is the most critical incubation period of all. When sleeping, the brain has time to find hidden connections between ideas, thus, the middle of the night or first waking aha moments.

These four practices are non-negotiables for peak performance. When life is challenging, these should be the last choices to reduce or remove. You should lean into them instead.

Two: Broaden Your Horizons

The left brain is detail oriented, the right brain wants to understand the bigger picture. The left sees the trees, the right sees the forest.
In times of crisis, we focus on the details - we want the answer immediately - a simple, known plan if possible with a high chance of success. When we are relaxed, the system moves to the other side, perspective expands, and we consider the larger context.
Broad vistas also broaden attention - when you see into the distance literally, you see into the distance figuratively. This is why time in nature has always been tightly coupled with creativity. The time acts as an incubation period for the ACC to consider far-flung ideas within a mood-enhancing environment. So in practical terms: go outside, look around, repeat as needed.

Three: The Importance of Non-Time and No One

Creativity needs non-time that belongs to no one but you. This gives you the luxury of patience. Being time-strapped is frequently kryptonite for creativity.

Non-time is a time for daydreaming and psychological distancing and switches on the default mode network. It also gives us distance from our problems so we can see things from multiple perspectives.
And it's not just non-time; it's also no one. **Solitude matters.** Taking a break from the sensory bombardment of the world gives your brain more time to incubate, wander, consider the far-flung ideas. Consider planning 60 to 120 minutes of uninterrupted non-time in the morning for high flow time that you probably won't get later in your day.

Four: Pattern Recognition, Search Parameters and Three-Martini Lunches

Our brain is a pattern recognition system and tends to search familiar local networks when hunting for those patterns. **Creativity requires** rummaging around in the brain's dusty corners, its backrooms and forgotten closets. Alcohol, like broad vistas, softens our focus and broadens our attention, expanding our search parameters and widening the size of the database. Also, alcohol tends to relax us, make us more playful and fear of failure reduces and risk taking rises. When faced with a creative task, try starting with the unfamiliar and force the brain to expand those search parameters.

Five: Think Inside The Box

Constraints drive creativity. You can't improvise and create on nothing - there has to be a template. A blank page will not work - it is too blank to be useful. The author has a cardinal rule when working: **always know your starts and your endings.** If creativity is required, not knowing where you're going is the fastest way to never get there.
Creative deadlines should fit inside your challenge-skills sweet spot - hard enough to make you stretch, not hard enough to make you snap.

Six: Load The Pattern Recognition System

This system requires ammunition. You need to feed it new information on a regular basis so it can make connections between ideas. Pattern recognition is foundational to our survival, so the brain rewards the connection of two ideas with **dopamine.** This dopamine then further tunes signal-to-noise ratios, helping us notice even more patterns. This is why creative ideas tend to spiral.
A caveat: specialization is a lousy formula for pattern recognition. As expertise in an area increases, it can block you from noticing remote associations. The solution is to **cast a wide net**. Choose books beyond your expertise with topics that intersect multiple curiosities. As you read, give yourself time to daydream. Pause when ideas arise, give your brain a chance to make connections. This is a patient process - don't force it. You're supplying the ammunition, let your brain do the rest.

Seven: The MacGyver Method

Take breaks from your creative process and do lightly stimulating exercise or activities. This occupies the conscious mind and serves as an incubation period, allowing the problem to pass

from the conscious to the subconscious. The unconscious mind is far faster, more energy efficient and nearly unlimited RAM - the unconscious mind can juggle an almost limitless number of ideas. So give it time and space to do it.

Write down the problem. Stay away from it for one to four hours and do something lightly stimulating. TV doesn't work - it requires too much mental processing to turn off consciousness. Then sit down and start writing again - anything. New ideas and solutions should be shortly forthcoming.

Chapter 17 - Long-Haul Creativity

A creative career isn't about climbing the mountain, it's about always climbing the mountain. And this level of commitment requires not just originality but rather the ultimate expression of originality: **the consistent reinvention of self.** Again and again. It's that ultimate impossible, the infinite game, where the goal is to keep on playing. Unfortunately, this is where the science gets thin. So, here are nine lessons on long-haul creativity, some are the authors, most he learned from others. Never assume what works for them, will work for you.

One: Pack Your Full Quiver
You can never have too many arrows in your quiver. You need to surround your craft. The fun of creativity is doing your thing well, but learning to do everybody else's thing well - that's not nearly as exciting.

Two: The Tim Farriss Four
Daily exercise lowers anxiety and helps clear the head
Carve out **big swatches of time** for key creative tasks, 2-4 hours long, as needed. No distractions at all. Turn off everything. This is your time to create
Take **long walks** for needed incubation periods. It switches off spotlight attention and switches on the default mode network - the imagination network.
Ask the better question by having people in your circle who are good at **spotting your assumptions** and can also know when you're asking the wrong questions. **Better questions** pique curiosity, thus, putting energy back in the system.

Three: Momentum Matters Most
The key to sustaining momentum is to **quit working at the point you're most excited**. Although this seems counterintuitive, creativity isn't a single, one day, battle - it's an ongoing war. Momentum is the real key. When you've left off someplace exciting, you dive right back in, no time wasted, no time to let fear creep into the equation, and far less time to get up to speed.

Four: A Few Thoughts on Sobbing, Shouting, and Punching Hard Objects
Creativity is insanely frustrating at times for everybody. What to do about it? Turns out, nothing. Frustration is a fundamental step in the creative process. Frustration is simply an obstruction to a goal that demands an innovative response. You are supposed to be here.

Unsolved problems stick in the brain in an easy to retrieve memory, and sensitizes you to anything that might be relevant, potentially including the solution. Almost anything will trigger an insight.

We need to stop treating the arrival of frustration as a disaster, rather, that a breakthrough is iminent. "Sometimes it's necessary to go a long distance out of the way to come a short distance correctly."

Five: Sir Ken Robinson Weighs in on Frustration

Per Ken Robinson, who has one of the most watched TED talks on creativity, argues that creativity should be as critical to a child's education as literacy and numeracy. Creativity, he's argued, is the most important survival skill in a world of accelerating technological change.

He believes long-haul creativity requires a low-level, near-constant sense of frustration. It's a constant, itchy dissatisfaction, a deep sense of what-if, and can-I-make-it-better, and the like.

Six: Everybody's Got a Job to Do

If you want to get paid to have original and useful ideas, then you better get used to working with others. Let these "others" do their job - investors, editors, boards of directors.

Seven: Someone's Always Chasing You

Tap one of the oldest motivators of all: **competition**. Believe it - someone is always chasing you. They have the required talent, they just haven't made all the right connections yet. But they will. You should find it very motivating to remember that.

Eight: Creativity is a By-Product

Creativity is almost always the **by-product of passionate hard work** and not the other way around. Do the things you love to do and try to get at their essence and allow things to emerge. As previously, doing what you love is about stacking intrinsic drivers so that you can sustain effort over the long haul. You must walk the path to mastery, and to be constantly learning and improving, reinventing yourself.

Per neuroscientist Liane Gabora, "Creativity is paradoxically about pulling something out of the brain that was never put into it." We are looking for options, and we tend to notice them in the middle of the activity. The artistry emerges from the work.

Nine: Always Keep Your Word - Especially When Talking to Yourself

Per psychologist Mihaly Csikszentmihalyi in his book, *Creativity*, "Creative people show tendencies of thought and action that in most people are segregated. They contain contradictory extremes; instead of being an 'individual', each of them is a 'multitude.'"

In general, every character trait can be thought of as a spectrum. Most people are of the either/or variety. But this is not true with creatives. They are often both/and.

Csikszentmihalyi **identified ten "both/and" characteristics of creatives.** The end result of their processes can be an emotional roller coaster. "The openness and sensitivity of creatives often exposes them to suffering and pain, yet also a great deal of enjoyment. The suffering is easy to understand. The greater sensitivity can cause slights and anxieties that are not usually felt by the rest of us….Being alone at the forefront of a discipline also makes you exposed and

vulnerable…It is also true that deep interest and involvement in obscure subjects often goes unrewarded, or even brings ridicule. **Divergent thinking is often perceived as deviant by the majority, and so the creative may feel isolated and misunderstood**. Although they are occupational hazards, so to speak, a creative person is aware and sensitive to them nonetheless."

Although the roller coaster of creativity can take on the feeling of a crisis, it is not a permission slip to misbehave. Keep your word to other people. More crucially, keep your word to yourself. Peak performance is a checklist, setting goals and checking them off - every day. If you set a goal, you complete that goal, no matter what emotions are involved.

Chapter 18 - The Flow of Creativity

Convergent and divergent are not different cognitive styles. Per psychologist John Kounious, "Divergent and convergent are not types of thinking, they are types of lab tasks. In terms of cognition, divergent thinking is convergent thinking repeated without the replacement of previously generated solutions (*but also not forgetting them entirely*). They are not so different."

In FLOW, the three major brain networks that underpin the creative process all work together in an unusual way.
The **executive network** is on for laser focus, but the inner critic portion is silent.
The **salience network** is both hyperactive and incredibly sensitive to both internal and external signals.
The **default mode network** is wide-open to do pattern recognition, but the portion that is our normal bias for negative information (threats) is reduced. FLOW is the brain on creative overdrive.
So the final question? Where do we get more FLOW?

Part IV

Flow

Today - is greatness possible? - Friedrich Nietzsche

Chapter 19 - The Decoder Ring

Page 212 - **read the author's battle with Lyme Disease** that was his first experience with FLOW and started his quest to uncover the biology underneath his "mystical experiences" while surfing his way to normal and out of the symptoms of the disease.

He first found the book, *Bone Games* (1999), by Rob Schultheis, that suggested that the mystical experiences of **mountaineers** might be related to the then-new idea of FLOW. Schultheis linked FLOW to endorphins and fight or flight hormones and other mood-enhancing reward chemicals.

Next he found research by Andrew Newberg, a neuroscientist at U. of Penn. He was curious about "cosmic unity", **the feeling of becoming one with everything**. He used single-photon emission computerized tomography to take pictures of the brains of Franciscan nuns and Tibetan Buddhists during "ecstatic meditation" - cosmic unity. To shift energy over to extreme focus, which requires large amounts of energy, the brain shuts down non-critical structures and repurposes the energy for attention.

One structure that gets shut down is the right posterior superior parietal lobe. This part of the brain helps us navigate through space. **It creates a boundary line around the body,** separating self from other that lets us know where we end and the rest of the world begins. In meditation, this structure deactivates and the boundary line we draw around ourselves dissolves. Newberg explained it then, "At that moment, the brain concludes, it has to conclude, that we are one with everything."

The author then wondered, could this be the same kind of attention, extreme focus, that surfers needed to ride waves and thus triggering FLOW and that feeling of being one with the waves? He asked Newberg, could it be that you become one with the thing you're focused on?

That began two decades of searching and research by the author of this book.

Chapter 20 - Flow Science

“I teach you the Superman. Man is something to be overcome. What have you done to overcome him?” Friedrich Nietzsche, *Thus Spoke Zarathustra*, 1883

The “superman” in the above quote, the “Ubermensch”, was his idea of becoming more than just a man. The ancient history of peak performance can be traced back to the Stoics of ancient Greeks, and the perfectibility of man of the Enlightenment thinkers, but Nietzsche was the first truly modern thinker to consider the question of peak performance after Charles Darwin published On the Origin of the Species - which means **he was the first to believe that perak performance came down to biology.**

Nietzsche realized that, if the body evolves, the mind evolves, consciousness evolves, and if you’re interested in human performance, you have to take these facts into account. He then picked up the then-popular term psychology, and made his opinions clear: any philosopher that didn’t understand the new science wasn’t worth understanding.

Nietzsche felt that we could escape the chaos of being an aggregation of the past, random parts with instincts, drives and habits and replace the struggle for survival with the **“will to power”**, the battle for self-actualization, for self-creation and self-overcoming, for mastery, excellence, and meaning.

His plan to become the Ubermensch is fairly practical:
Find your passion and purpose, what he called “an organizing idea”. He wrote, “The organizing idea that is destined to rule our lives keeps growing deep down. It begins to command, slowly it leads us back from side roads and wrong roads; it prepares single qualities and fitnesses that will one day prove to be indispensable.”
Learn to suffer. Peak performance demands grit, and suffering was the fastest way to acquire that skill.
Learn and create, take it all in, transform it to art. He felt that art was the antidote to nihilism through self-expression, self-overcoming and the discovery of meaning. This is the will to power, the existentialist mandate. We take responsibility for our choices, we act, we create, and we alone bear the responsibility of our creation.
Flow. He wrote, “For there to be art, for there to be any aesthetic doing and seeing, one physiological precondition is indispensable: Rausch (FLOW). Rausch must first have enhanced the excitability of the whole machine, else there is no art.”

Thus, he ended up with the same blueprint for this book:
Find a passion and purpose.
Fortify passion with grit and goals
Amplify the results with learning and creativity
Use FLOW to turbo-boost the whole process

Flow Psychology

Psychologist **Mihaly Csikszentmihalyi** coined the word FLOW for a reason. In the 1970's, he embarked on one of the largest optimal performance studies ever undertaken, going around the world asking tens of thousands of people about the times in their life when they felt their best and performed their best.

First, everyone he spoke to, regardless of culture, class, gender, or age, said, **they feel their best and perform the best when they are in an altered state of consciousness, a state where every decision, every action, *flows* seamlessly, perfectly, from the last**.

Second, it showed up wherever he went - the state is universal. Evolution *(or design*) shaped the brain to perform at its best by getting into FLOW. It can show up in anyone, anywhere, provided certain initial conditions are met.

Third, he also discovered that FLOW was definable. The state has **six core characteristics**, and if they all are present, we call it FLOW:
Complete Concentration - total engagement, enjoyment and absorption in the right here and now.
Merging of Action and Awareness - the front edge of that feeling of oneness with everything
Sense of Self Vanishes - you no longer distinguish the self from the thing that the self is doing. Our sense of self-consciousness also vanishes, the inner critic is quiet. We are liberated, free, we are finally getting out of our own way.
Altered Sense of Time - called "time dilation", time either slows down into a freeze-frame effect or it speeds up and five hours passes by in five minutes. Past and future vanish, along with the anxiety and fear of them, and we are plunged into an elongated present, what is sometimes called the "deep now".
Paradox of Control - we have a powerful sense of control over the situation, often in a situation that is normally not controllable.
Autotelic Experience - The experience is intensely and intrinsically rewarding (autotelic), meaning the activity itself is its own reward. The experience is at the highest ends of pleasurable and meaningful and we will go to great lengths, risk and expense to do it again.

Fourth, since FLOW is describable, it's measurable. Psychologists have well-validated methods to do just that.

Fifth, he realized that the experience of FLOW is actually **a spectrum of experiences**. In microflow, all or most characteristics are present, just dialed down super-low. Losing yourself in a book or composing an email that turns into an essay are good examples. Macroflow is the other end of the spectrum, when all the characteristics show up at once, dialed up to eleven. This is the quasi-mystical of surfers and mountaineers, where impossible becomes possible, just another thing we do. No problem.

Sixth, in his research, the people who scored off the charts for overall well-being and life satisfaction were the people with the most FLOW in their lives. **The state is the source code.**

Since Csikszentmihalyi did this foundational work, brain imaging technology has advanced and allowed us to look to see where the state is coming from and why it's coming. The map that this research has created has made training FLOW a very real possibility.

To understand FLOW, we want to understand how changes in the four categories of brain activity introduced earlier - **neuroanatomy and networks, and neurochemistry and neuroelectricity** - conspire to create the state.
See pages 224 - 231 for details.

Chapter 21 - Flow Triggers

There are **22 (or more) flow triggers** that work by driving attention into the present moment. They do this in some combination of three ways:
Push norepinephrine - focusing
Push dopamine - focusing
Lower cognitive load - frees up psychic energy to be repurposed for attention

The author categorizes these triggers into four broad categories. These triggers are your toolbox. If you want more FLOW, then build your life around these triggers.

Internal Triggers

These are conditions in our inner, psychological environment that create more flow.

Autonomy
Autonomy and attention are coupled systems. When we are both in charge of our mind and our destiny our whole being gets involved. Voluntary focusing of attention is a state of optimal interaction because we can direct the flow of reciprocal information that unites us to the environment. **We know that we are alive and that we matter.** Also, when we focus attention in the present, we are taking attention off forms of anxiety. This lightens the load and lets us repurpose the extra energy for focus.

You must have enough autonomy to devote 15-20% of your time to your clear goals each day and the ability to do four things consistently: **get enough sleep, regular exercise, be able to work during periods of maximal alertness and be able to chase FLOW when desired**. To these four, also add the art of saying NO. The art of NO is woven into the art of impossible. You can't do everything, and if something is reducing your focus, attention and therefore time in FLOW - say NO. The art of FLOW demands the art of autonomy.

Curiosity-Passion-Purpose
Per John Hagel, cofounder of Deloitte's Center for the Edge, their global of the world's highest performers found that the "individuals and teams who got farthest fastest were the ones consistently tapping into passion and finding flow."
Curiosity, passion and purpose are a triad of intrinsic motivators, that when perfectly stacked - especially once purpose is included - increase in their power to move us into FLOW.
Purpose shifts our lens, putting attention outside ourselves, getting out of our heads and into the zone.

Complete Concentration
Flow follows focus. When locked and loaded, task-specific focus becomes the gateway to the merger of action and awareness and the activation switch for automatized processing. **The brain can now pass management responsibilities from the conscious to the unconscious**, while the flow-crushing self stays out of the picture.

Complete concentration is more than a trigger, it's also a flow deal-breaker. Research shows that 90 to 120 minutes of uninterrupted concentration is the ideal time period to maximize focus, and by extension, flow. **No distractions, no multitasking, email and phone off, streaming videos not streaming, and social media walled off.**

In anything we must accomplish, find something within that task that aligns with your curiosity, passion and purpose. Find something that helps you advance your craft and walk that path to mastery. It's a form of **cognitive reframing** that can enhance FLOW.

Make sure you communicate ahead of time, to whomever needs to know, that you will be unavailable during this time. If needed, tell them what you're doing and why. If not needed - **the world can wait for you**. No problem.

Clear Goals
If our goals are clear, the brain doesn't have to worry about what to do or what to do next. Thus, focus tightens, motivation heightens, and extraneous information gets filtered out. This lowers cognitive load and frees up energy, which can then be repurposed for attention. Action and awareness can start to merge, and we're pulled deeper into the now. And in the now, there's no past or future and a lot less room for self - which are the pesky intruders most likely to yanks us out of FLOW and towards them.

The emphasis here falls on clear and not goals. Clarity gives us certainty, what to do and when to do it. As needed, break tasks into bite-sized chunks and set goals accordingly. Aim for the challenge-skills sweet spot.

Immediate Feedback
Clear goals tell us what we're doing; immediate feedback tells us how to do it better. Tighten feedback loops by putting mechanisms in place so attention doesn't have to wander. Think of daily reviews, not quarterly reviews. Determine the exact kind of feedback you need. Find out

what works best for you: positive or negative feedback or a combination of both? Written or verbal? Know your negative tendencies in your work so that you can filter and avoid them.

Feedback is a filter, so set up your filter so it keeps you on track and in FLOW. Feedback should be enough to steer by, not enough to overwhelm. Keep the feedback on topic and objective. Subjective feedback from individuals is normally not that helpful. Consider this process your **"minimal feedback for flow", or MFF.**

The Challenge-Skills Balance
FLOW appears near, but not on, the emotional midpoint between boredom and anxiety, in what scientists call the **"flow channel".** The spot where the task is hard enough to make us stretch but not hard enough to make us snap.

Set high, hard goals, just chunk them as needed into manageable steps that can become clear goals. Shoot for a challenge point about **4% higher** than your current skill set. It can be a bit higher or lower, work with this over time to see what works best for you.

Tune every task you do in a day, so each of them lands inside the challenge-skills sweet spot. Is the challenge too great and producing anxiety? Then chunk it into smaller tasks and lighten the load. Is the challenge too understimulating? Make them harder - demand more excellence for yourself.
(Create your template of work for the day, but don't be afraid to pivot and modify as needed.)

External Triggers

External triggers are environmental triggers or qualities in the world around us that drive us deeper into flow. There are four in total and all tend to work the same way, pushing dopamine and norepinephrine, enhancing focus.

HIgh Consequences
These are about threats lurking in our environment, things that are subjectively dangerous to us. Risk increases dopamine and norepinephrine - **not adrenaline, this is a misnomer.** Few people actually like the feeling of adrenaline.
High consequences environment is external (a high cliff or board meeting) and maintaining a challenge-skills balance is internal, something out of my comfort zone subjectively. Also, high consequence triggers **do not have to necessitate physical risk**. You can put yourself into riskier social environments, creative environments, or intellectual environments.
Social risks are a fantastic flow trigger. Your brain processes social danger with the same structures as physical danger. From an evolutionary perspective, social contexts were much more serious - fights, banishment, exile - could be death sentences.
Companies that include the **"fail forward"** motto create a consequence-friendly environment allowing their employees to take risks, and thus contribute to personal and group flow.

Per Ned Hollowell, in *The Rise of Superman* (also by this author), “To reach flow, one must be willing to take risks…..And the average person must be willing to fail, look foolish, and fall flat on their faces should they wish to enter this state (flow).”

Rich Environment
This is a combination of novelty, unpredictability, and complexity. All three drive dopamine and as a result catch and hold our attention.

Novelty is one of our brain’s favorite experiences, with an entire network - **salience** - devoted to its detection. From an evolutionary perspective, novelty could either mean danger or opportunity lurking in our environment. The brain then prioritizes this information for survival.
Unpredictability means we don’t know what happens next, so we pay attention to the next. The dopamine spike of novelty and unpredictability rival the spike in dopamine produced by cocaine - a 700% boost in dopamine. Which leads to a super boost in focus, thus driving us into flow.
Complexity shows up when we force the brain to **expand its perceptual capacity.** Gazing at a night sky, standing at the rim of the Grand Canyon, these experiences of contemplation and awe slows down time and the moment is seemingly stretched to infinity. It is also, partially, a dopamine driven process.

To employ these triggers, take trips into nature often. **Natural environments** have high concentrations of all three triggers. A twenty minute walk in the woods outperforms most of the antidepressants on the market. Work in an environment that is novel, like a coffee shop or take your studies on the road. Novelty means new - get out of your comfort zone, do something different!

Deep Embodiment
This is a type of expanded physical awareness. It means we are paying the most attention to the task at hand when **multiple senses are engaged** in that task. Watching a scene unfold is not nearly as engaging as actually participating in that scene. Think watching sports on TV versus playing sports. Montessori schools, and their method, emphasize both intrinsic motivation and learning through doing. Their students don’t just read about things, they do that thing, which engages multiple sensory systems and drives attention into the now and flow.

Activities with multiple senses demand all our focus so, get out there, get physical and learn by doing.

Creative Triggers

Creativity
Under the hood of creativity, you see two things: **pattern recognition,** the brain’s ability to link new ideas together, and **risk-taking,** the courage to bring those new ideas into the world. Both produce dopamine and drive focus and flow.
So, we must do three things consistently

First, we need to constantly load the pattern recognition system with raw materials it needs to find connections.
Second, learn to think differently. Tackle problems from new or multiple angles, stretch your imagination, seek the novel path or idea.
Third, and most importantly: make creativity a value and a virtue. Your life needs to become your art. Or to be more specific, the art of impossible demands the art of life. When creativity becomes a central value and virtue, high flow states are possible. Impossible, is possible.

Social Triggers

Psychologist Keith Sawyer, author of *Group Genius:The Creative Power of Collaboration*, studied group flow in improv jazz, comedy and theater troupes for fifteen years. He wondered if the seemingly foundational shift in consciousness that produced a whole greater than the parts was caused by each individual in flow or was it a product of the shared experience that took them into flow together. He and other researchers found ten triggers for this shared state.

Group flow can be subdivided into "**social flow,**" or the flow that arises in a social context, "**interpersonal flow**," or what two people talking could experience, and "**team flow,**" where flow results from triggers that are innate in team dynamics.

Although technological limitations have stood in the way of deeper research into the neurobiology of group flow or group flow triggers. But, we have learned enough to be practical and tactical.

The Ten Triggers of Group Flow

Complete Concentration
Group flow requires this as much as individual flow. Walling off your team from the world - and its distractions - is the best approach.
Shared, Clear Goals
For flow to arise, everyone needs to be heading in the same direction. They need to feel that they are moving together toward the same or complementary targets. Sawyer found that the goals should not be tightly focused, just enough of a target to know when the group is getting closer to success, but open-ended enough for creativity to emerge.
Groups should form with "collective ambition" - they all should have a passion and purpose for being in the group. Lastly, if you want group flow, when the team wins, each individual also has to win, or what is called "aligned personal goals."

Shared Risk
Risk must be shared. Without the danger of everyone failing, there's no opportunity for anyone to soar. This means you truly have each other's back, giving them the space to fail and helping them back up when they do.

Close Listening
This is the ability to produce real-time, unplanned responses to the dialogue of others on the team as it unfolds. Empathy and attention are both engaged.
Good Communication
This is the group version of immediate feedback and it needs to guide the group's collective behavior and maximize every member of that group's unique skill set.
Blending Egos
This is a collective version of humility. No one is hogging the spotlight, everybody is involved and creates a shared sense of identity.
Equal Participation
This demands that everybody has a part to play and everyone plays their part. And the role we play is one that demands we utilize our skills to the utmost.
Familiarity
This means that the group has a shared knowledge base, a common language, and a communication style based on unspoken understandings. It means everybody is always on the same page. The goal is to know each other well enough that the unpredictable becomes predictable and when the novel or unexpected arise, the group moves seamlessly forward. You have to know what the group is going to do when the going gets tough.
A Sense of Control
This combines autonomy with competence. This means the group does not assign you a goal without your consent or limit (too severely) the way you want to approach that goal. Also, a team has to have a collective sense of control and confidence to maximize flow, called "collective efficacy beliefs."
Always Say Yes
By saying yes, it means that interactions should be additive more than argumentative. You're keeping that person and the group engaged in the moment and lowering cognitive load. To avoid "groupthink", simply find something to build upon. You don't have to agree with everyone all the time. Keep the momentum moving into flow. That's what you're after.

To really cultivate flow in your life, build these triggers into every facet of your life. We are designed for peak performance and since flow certainly works, our brains are hard-wired for the experience. We are all susceptible to these triggers, if we use them.

Chapter 22 - The Flow Cycle

Research tells us that flow is a four-stage cycle, with each stage underpinned by different and precise changes in brain function. You can't skip steps. You have to move through each stage of the cycle before you can enter the next. One thing to note: while flow feels great, the step to flow can be unpleasant, but that unpleasantness is a built-in part of the experience and is unavoidable. You're going to have to get uncomfortable to get to flow.

Stage One: Struggle

Optimal performance begins in maximum frustration. Struggle is a loading phase. We're loading, then overloading, the brain with information. We're learning at this stage. We need the conscious mind to acquire skills and information. Your inner critic, silent in flow, is usually loud during struggle.

You master skills slowly and consciously, before the brain can execute flawlessly and unconsciously. Flow is what happens when all of the now unconscious skills snap together.

Frustration is the sign that you're moving in the right direction - not the wrong direction - your emotions don't mean what you think they mean. Don't take time to stop, rethink and regroup. This way lies flow. Keep going. Flow is the reward for the struggle.

This book started with the motivation triad of drive, grit and goals and spent lots of time on learning and creativity. **You have to have these abilities** in place or you stall in struggle.

Neurobiologically, flow arises moments after our senses detect a serious uptick in salience. New, critical information is pouring into the brain. If you've trained for that moment and automized your responses, then the brain decides to **"fight back".** And we humans fight back when frustrated because it's woven into a feeling we can't get enough of - **courage.**

Struggle is a conversation. Your brain asks, "Is this worth the energy?" Flow starts with the decision to fight back. We say, "Hell yes, I'll fight back!" This is why the **habit of ferocity** is so critical. We need to automate and hone the instinctive ability to rise to any challenge. The brain favors the option to stop or flee - too much energy. And we override that part of our biology with ferocity. Flow starts when we say yes to this fight.

When you are in struggle, use the triggers:

Check your challenge-skills sweet spot - too challenging, too easy?
Check if your goals are crystal clear and you're getting immediate feedback
Add in novelty, complexity, and unpredictability when needed
Make sure the pattern recognition system is well stocked - are you branching out into other areas that might connect to the one you're working on?
Check your mood - is creativity waning due to lack of exercise, sleep, solid nutrition? Are you engaged in daily gratitude and mindfulness?

Be mindful of **"high consequences"** when in struggle mode. High risk are things to take once you are in flow.

Stage Two: Release

In release, we want to relax and let go, get your mind off the problem, and let it pass from conscious to unconscious. Executive attention disengages and the default mode network takes over. Release is an **incubation period**, allowing the brain's pattern recognition system to chew on the problem for a time while you do other things.

Research shows that low-grade physical activity works best for release. Take a drive, work in the garden, draw, read or hike.

Three things:
Don't exhaust yourself during release - you'll need energy to dive back in later - unless your dive back in is the next day. Eat and sleep after hard training if you need to dive back in that same day.
TV will not work. Release requires brain waves in the alpha range, TV pulls us back into beta waves.
Not all struggles are the same. Acute struggles that pop up require an override of the "stop" question from above. Drive through it, then move to release and relax.

Navy SEALs say, "Trust your training." Dive into your challenge, then believe in your ability to find and execute the perfect solution. It's why you struggled in the struggle, to automate those action plans. Now, get out of the way.

Deep embodiment is the trigger to reach for in release. That's what a low-grade physical activity is about. You're trying to release and flow. Experiment with different activities and use them to your advantage.

Stage Three: Flow

Now we've arrived - the flow stage itself. Now it's time to work on maximizing our time in the flow state.

Once in the zone, avoid the four "flow blockers":
Distraction - Interruptions are the number one reason people get knocked out of flow. And once out, it's hard to get back in. You must practice distraction management. Turn everything off and keep them off!
Negative Thinking - The minute you start thinking negatively, the inner critic via the prefrontal cortex engages. You want to be in a good mood, which allows the anterior cingulate cortex to hunt for remote associations between ideas. Flow is a creative process, let your brain create.
Nonoptimal Arousal - Once in flow, if you don't have the energy to sustain the fight, you will succumb to fatigue and drop out of the zone. Nutrition, active recovery, sleep hygiene, and regular exercise matter.
Lack of Preparation - This could be physical or mental. If you have automated key skills and abilities, you can't get into flow. When in learning mode, surround the problem. Come at it from every angle, so there are no weak links in your game. In short, master mastery.

Flow Amplification

Once in flow, you want to harness the ability to move from microflow to macroflow - longer laster experiences, deeper flow states.
If you're in flow, l**ayer in more triggers**. Up the level of novelty, complexity and unpredictability. Get more creative in your approach. Increase the challenge level slightly. Add in a bit of risk.

Now that you're in flow, you can lean more on **"high consequences**" to drive deeper into the state.

Simultaneously, stay focused and exercise a bit of thought control. We have to remove external distractions to get into flow, but once there, we become prone to **internal distractions.** As new ideas come forth, follow the tangents for sure - this is where creative insights live - but recognize dead-end streets. Also, you might try writing down these tangents in a separate notebook so you can leave them there for now, and return another time for more in depth analysis and planning. Staying in flow, like getting there, takes practice.

Stage Four: Recovery

In recovery, you're recharging the batteries. The neurochemicals that were produced are expensive, it takes time to refill those tanks. **Nutrition matters, sunlight matters, sleep matters**. They matter as much as everything else discussed.
Learning is significantly amplified in flow and delta wave sleep is required to move information from short-term holding to long-term storage. **Memory consolidation** demands these delta waves.
Active recovery is a grit skill. It's mindfulness, saunas, stretching, massage, ice baths and the like. It is not TV and alcohol.
The next struggle to flow will start soon. Are you recovered and ready for it?

Chapter 23 - All Together Now

Here's a framework for tying all of these ideas together. Impossible is a checklist.

Let's start with **order.**
You have to start where this book started: with **curiosity, passion and purpose**. If you're not rushing for some reason, this will take awhile. Keep playing at the intersections of curiosities enough to figure out if **a particular intersection** is actually interesting enough to sustain focus for the long haul. If when you explore that intersection you find curiosity increasing and yourself slipping into flow - that's a good sign you might be exactly where you need to be.
Learn something interesting about your interests, **incubate** for a time, then add more information. This will add **autonomy** to the mix. Over time, this order will become the road to **mastery** as you learn more and more.

Next, layer in **goals.** Start with your **massively transformative purpose** - that mission statement for your life. Then turn that into a chunked series of **high, hard goals,** all the steps needed to accomplish that MTP. Now, shrink those high, hard goals into **clear goals** - your daily attack plant of small and precise targets that sit inside the challenge-skills sweet spot. These truly are items on a checklist.

Remember to figure out how many clear goals you can accomplish **in a day,** then do it. If the challenge turns out to be too much for the day, chunk it down into smaller tasks, and accomplish some of those tasks, then move the rest to your checklist tomorrow.

Cross an item off the list, get a little dopamine - you're closer to your goal. Repeat all day, every day. One little win at a time - and some of those wins will hopefully produce some flow and **momentum.**

Once intrinsic drivers are aligned and goals are stacked, everything else is about **scheduling.** There are **seven daily practices and six weekly practices that are non-negotiable**. You have to weave these into your schedule. But this doesn't have to happen all at once. Start by starting. As the process begins to save you time, add in more activities. This is a process - not an event.

Daily Practices

1. 90 to 120 minutes of **uninterrupted concentration**, spent on your most important task of the day, one that will produce the biggest win. Try to apply one of your strengths in a new way, a bit outside your comfort zone. Push yourself. **Grit** will be an addition to your skill sets as well as the habit of **ferocity**.
2. 5 minutes for **distraction management**. This goes at the end of the workday to prepare for the next day's uninterrupted concentration period. Everything is off. Plan.
3. 5 minutes for making a **clear goals list**. Also usually at the end of a work day to prepare for the next day. Order tasks from most difficult, and most rewarding, to the least. This list is a a list of everything you want to accomplish, including workouts, mindfulness, gratitude, etc. If it goes on the list, it gets done. Then check them off as you go.
4. 5 minutes for a daily **gratitude** practice.
5. 20 minutes for **release** and/or 20 minutes for **mindfulness** - the minimum times for these two practices - you can go longer.
6. 25 minutes to load the **pattern recognition system** (reading outside your core area). The ROI says books are the best way to go. Think 25 pages of reading
7. 7-8 hours of **sleep** each night.

Weekly Practices

1. 2-6 hours, one or two times a week: **highest flow activity** for you (skiing, biking, singing, dancing, whatever). These are the activities that get edited out when we are "busy". But the more flow you get, the more flow you get. Try to deploy as many flow triggers as possible, be creative, take risks, seek out novelty, complexity and unpredictability. Use this time to train grit and use one or more of your core strengths.
2. 60 minutes, three times per week: **regular exercise**. Push yourself, employ your triggers, find a new challenge-skills sweet spot. Train that grit while you reset your nervous system. Outside is always better when you can. Spatial skills and mapping are good for your brain.

3. 20-40 minutes, three times per week: **active recovery** (sauna, massage, light yoga, etc.)
4. 30 to 60 minutes, one time a week: **train a weakness and/or train being your best when you're at your worst and/or practice taking risks.**
5. 120 minutes a week: **get feedback** on the work you've been doing in your 90-120 minutes uninterrupted time, especially if you're an introvert. Having loving, supportive people in our lives and also being that way ourselves keeps us calm and happy. This keeps us prepared to attach higher levels of the challenge-skills sweet spots and practice our **emotional intelligence (EQ) skills.**

Stacking Practices

Use your exercise sessions to also train grit and perseverance. You can also use this time to train up a weakness and practice being your best when you're at your worst.

Use a few of the active recovery periods to also practice mindfulness and/or load the pattern recognition system. Read books.

Before you enter your release practice, preload your consciousness with a particular challenge or problem, then re-engage it on the other end after the subconscious has chewed it for a time - the MacGyver method.

You can always play at the intersections of curiosity and passion, even beyond setting your MTP's. This is a great place to load up the pattern recognition system with novel and interesting things and help find connections between ideas.

Always layer flow triggers into every activity.

Practice group flow's triggers and train up your EQ while in your social support time each week. Creativity and the pursuit of mastery should be built into everything you do.

Progress is often invisible. Peak performance works like compound interest, a little bit today, a little bit more tomorrow. Do this for weeks and months and years. A life beyond your imagination is possible. What challenges would you tackle if you knew you could be 500% more productive, or 600% more creative. That's what this book is all about. Get to it.
For more from Steven Kotler, the Flow Research Collective and the Zero-to-Dangerous training go to: www.zerotodangerous.com

Other Books by Steven Kotler, go to Amazon.