

Satisfy the Beast. Science the Sh-t Out Of Difficult Tasks and Habits

Geet Duggal • 19 mins

Feb 16th

Special Guests: Obsidian, iA Writer, and iOS Shortcuts



Do you ever wonder why some of your habits stick with you while others seem to slip away? Or why sometimes you can't quite convince yourself to do a seemingly straightforward task despite the fact that you know it resonates with you *and* you have the time?

Every morning I make my wife a cup of coffee. As I prepare to grind the beans, I am often faced with the fact that the portafilter still has used coffee grounds from yesterday. So I begin to clean the filter while the commotion of a typical morning with a toddler and an infant has already started.

As all of this is happening, I'm remembering all the things I'd like to get done today. Oh yeah, and I also tell myself, “‘future you’ would really

appreciate cleaning this filter out right after it's used instead of cleaning it now.” Fast-forward 24 hours, and I’m confronted with the same story: an uncleaned filter. Sure, there was that *one* week where I cleaned the filter every day (and it was awesome), but the practice never stuck.



Photo by [tabitha turner](#) on [Unsplash](#)

Fast forward to the evening. The kids are asleep, the house is reasonably clean, and I finally have an opportunity to tackle some tasks that I’ve been meaning to accomplish. “ Create meal plan for the week” stares at me. I seemingly have no motivation to do this at the moment even though I know the task resonates with me and needs to get done.

This article is part two of a series of articles where I am addressing three

areas I feel like I can always improve on:

1. task management,
2. habit formation, and
3. event prioritization.

The article on task management (“Capture to do”) is focused on how you get things *out* of your noisy brain into a digital, plain text-centric space where you can re-discover what resonates with you, turn these things into actionable projects, and execute on them. “Capture to do” provides a simple framework to use technology to help you create and organize work on projects meaningful to you.

Capture to do. How I manage literally all my tasks in Obsidian

Unlock the simple, satisfying, and energizing secret to task management ‘productivity’

[medium.com](https://medium.com/@joshuacampbell/unlock-the-simple-satisfying-and-energizing-secret-to-task-management-productivity-3a2a2f3a2a2f)

This sequel, “satisfy the beast” (SB), focuses more on what you keep *in* your brain on a *daily* basis while working on projects and chores. It is a simple framework that allows you to listen to yourself as you go about your day. SB helps to overcome friction to do tasks that resonate with you. It guides you to build habits that help you keep spinning the fly-wheel of satisfaction.

Like “capture to do”, “satisfy the beast” is the product of years of self-exploration. In this exploration, I have experimented with strategies in

popular literature, read about behavioral patterns observed by scientists, and implemented specific examples of how I use simple plain text-oriented software tools to help me in the process.

SB is a synthesis of this exploration. It distills many insights from the science of task execution and habit formation into a few simple concepts.

The key ideas of SB are to:

- prime your working memory for play,
- anticipate the immediate physical reward,
- listen to yourself, and
- lean on tech for everything else.

Prime your working memory for play

There are severe limits in how much can be kept in mind at once (~3–5 items)

— Nelson Cowan, “The Magical Mystery Four”

It’s obvious that we rely on our memory to execute most tasks and habits. What’s not so obvious is just how limited ‘working memory’ is and how we can use it to our advantage. If you remember one thing from this article it should be this: thoughtfully choose four(-ish) things to play with in your mind at any given time.

Consider the uncleaned coffee grounds and day planning example above. Instead of processing these tasks in a hap-hazard way, imagine that you

use your working memory to sequence them into four simple actions:

1. Clean portafilter
2. Open your task manager app on your phone
3. Go to post office & grocery store
4. Get contact lens solution

The first action addresses the immediate task at hand. You make sure to do this before anything else. It is also a habit you're trying to build.

The second action initiates a process of capturing a few key things to do today, and the last two are the actual things to put in the task manager app. After you're finished with this, your working memory can be discarded. You trust that you've done everything you need to with your thoughts.

The list above is simple, specific, and (low-key) powerful. You have committed yourself to a small and concrete sequence of events in the same way you would tie your shoe. But unlike the muscle-memory act of shoe-tying, the power in using your working memory is that you are *conscious* of the sequence of events above.

The first task has been deliberately selected as a forcing function to execute on a desired habit *before* you become distracted with many other thoughts for what you need to do the rest of the day. The rest of the tasks help to process the ‘distractions’.

This awareness is key to execution of hard tasks and habits. If you repeat a pattern of tasks similar to this just a few times, you may be on your way to developing *two* habits: clean the portafilter and capture important

tasks. Rehearsing these actions in your mind increases the chance of executing them even in the presence of distractions.

Naturally, repetition of behavior helps you to build habits.

What's not so obvious is that limiting yourself to a handful of tasks in working memory helps to increase the chance you will repeat a desired behavior. Crucially, these items don't have to be always the exact same and in the same order. This kind of flexibility increases your chance of “doing the thing.”

For example suppose, on a different occasion, I am adding items to my grocery list while in visual proximity of the espresso machine. I notice that the portafilter is uncleaned. Since I already have an association of cleaning the filter with capturing tasks, it is easier for me to mentally commit to clean the filter *after* adding the grocery items to my list.

The exact set of tasks and order they are performed is different, but the outcome is essentially the same. What matters is their proximity to one another in space-time. In this sense, the process of ‘loading and executing on items in working memory’ subsumes two traditionally advocated techniques for building habits:

- rehearse a specific sequence of procedures in memory, and
- anchor desired habits to established ones.

(For more detail, see ‘A New Look at Habits and the Habit–Goal Interface’ by Wendy Wood & David Neal and *Tiny Habits* by BJ Fogg respectively.)

Working memory has a rich history of research dating back over a century.

ry. Examples of using working memory include constructing a sentence from ideas, carrying digits in arithmetic, and planning a route for daily errands. Crucially, you don't just access working memory. You *play* with it.

It is a stand-out fact that there appears to be only a handful of items you can play with in memory at any given time: four, give or take one. You might be thinking, “I can keep more items than that in my working memory: phone numbers, credit card numbers, even entire grocery lists!” In those cases, you’re likely grouping together items and working with only a handful of groups at a time.

The limit of 3 to 5 items is really getting at the number of things you can comfortably keep active before having to swap things in and out of your memory. The limit has been shown in various ways, but just to give you an idea, here is a classic experiment called the ‘reading span task’ (see ‘Individual Differences in Working Memory and Reading’ by Meredyth Daneman & Patricia Carpenter for more information). Put simply, all you are required to do in this task is to remember the last words in a set of sentences:

EXPERIMENT 1

Method

The subjects were given four tests: (1) a reading span test to measure the span of working memory, (2) a reading comprehension test that asked questions about facts and pronominal references, and (3) a traditional word span test.

Reading span test. Subjects had to read a series of sentences aloud at their own pace and recall the last word of each sentence. The test was constructed with 60 unrelated sentences, 13 to 16 words in length. Each sentence ended in a different word. Two examples are: *When at last his eyes opened, there was no gleam of triumph, no shade of anger. The taxi turned up Michigan Avenue where they had a clear view of the lake.* Each sentence was typed on a single line across the center of an 8 × 5-in. index card. The cards were arranged in three sets each of two, three, four, five, and six sentences. Blank cards were inserted to mark the beginning and end of each set.

The experimenter showed one card at a time to the subject. The subject was required to read the sentence aloud. As soon as the sentence was read, a second card

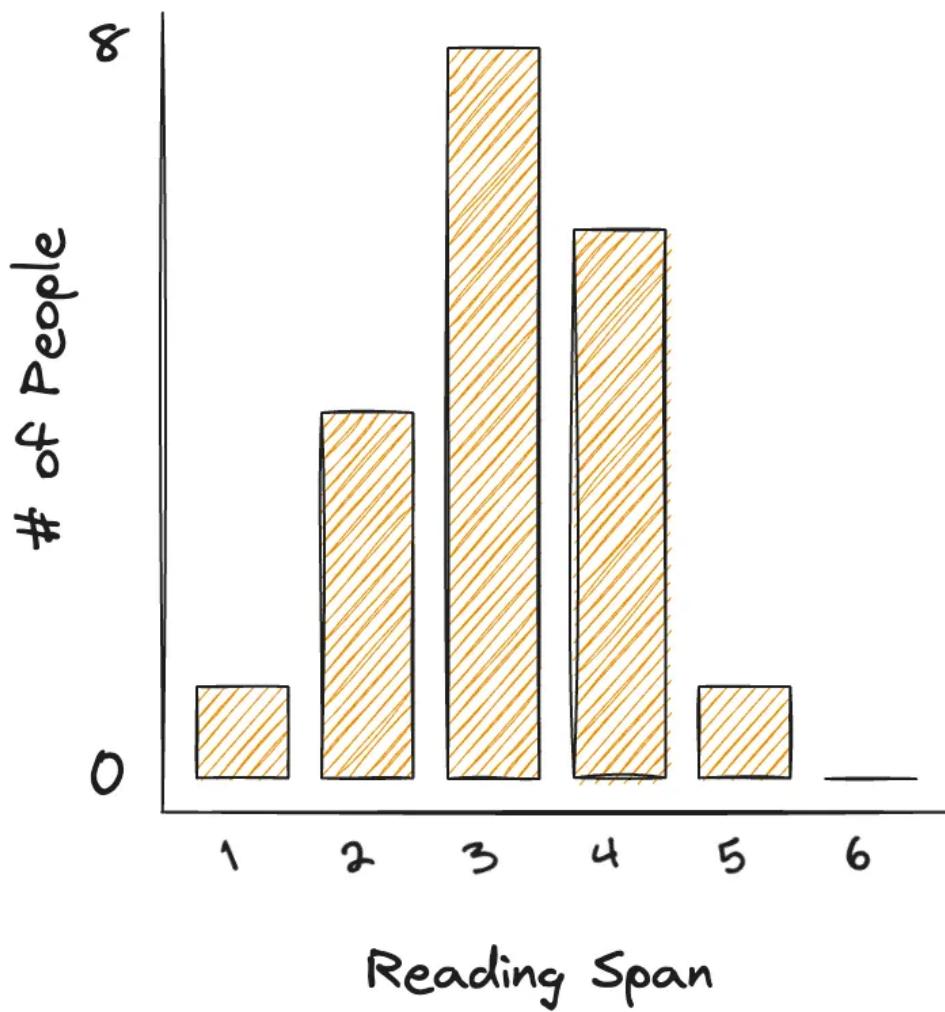
was placed on top of the first and the subject read the new sentence. The procedure was repeated until a blank card signaled that a trial had ended and that he was to recall the last word of each of the sentences in the order in which they had occurred. Subjects were given several practice items at the two sentence level before the test began. They were warned to expect the number of sentences per set to increase during the course of the test. The span test contained three sets each of two, three, four, five, and six sentences. Subjects were presented increasingly longer sets of sentences until they failed all three sets at a particular level. Testing was terminated at that point. The level at which a subject was correct on two out of three sets was taken as a measure of the subject's reading span. No subjects correctly recalled any set of cards at a higher level than their defined spans.

Individual Differences in Working Memory and Reading

MEREDYTH DANEMAN AND PATRICIA A. CARPENTER

Carnegie-Mellon University

This experimental design is particularly useful in understanding limitations on working memory since there is little-to-no time to rehearse or memorize the last words: sentences are shown as quickly as they are read. Notably, the distribution of reading spans is 'normal' meaning that, for a reasonably large set of people, the spans center well around some average value (in this case 3) and taper off (in this case quickly) thereafter.



My suggestion to load only a handful of items into working memory is motivated by this sort of thoughtful research on the limits of ‘working memory capacity’. However, your working memory shouldn’t be thought of as a limitation. Rather, think of it as fertile ground for ideas to grow.

“... the real utility ... is not to talk about what’s already known, but to do something new ... make a “triangulation” that no one has ever made before. — Richard Feynman, Feynman’s Tips on Physics (Memorization)

You can load your working memory from items already in your long or short term memory as well as brand new items you've encountered. In doing this, you've created a small sandbox to toy with a few specific concepts to execute on a task or desired habit. It's a safe space to be creative.

To illustrate the generality of loading working memory beyond small tasks, here are a few requirements I came up with when considering the broader task “❑ Create meal plan for the week”:

- inexpensive
- easy to cook
- food for kids and adults
- leftover-friendly

After just a short amount of play in this sandbox, I realized that a whole chicken bought with the intent to roast is just around \$10. It keeps well after cooking, requires near zero preparation time, and provides the hearty portion of food for a variety of meals (eg. chicken taco bowl, chicken sandwich, chicken plate with potatoes & salad, etc). In a relatively small timeframe I was able to come up with an idea that went a long way to covering meals for the entire week.

Of course, the versatility of roast chicken isn't a new theory of physical reality, but I was able to add a little creativity and fun to an otherwise mundane task. Best of all, you can take your working memory with you *anywhere, anytime*. No phone, computer, or paper & pencil needed. I came up with this while strolling our baby and thinking about the requirements. This fact alone drastically increases the chance that you can come up with a concrete and even creative way to execute on a task

or habit.

Our minds have probably been conditioned through tens of thousands of years of evolution to play with these kinds of scenarios and come up with creative solutions to survive and thrive. When you prime your working memory for play in this way, you consciously pay homage to something very basic about your human behavior. You satisfy the beast inside you.

Anticipate the immediate physical reward

Despite all of our human complexity, there is still a beast inside all of us that needs to be rewarded at a very basic level to accomplish difficult tasks and form desirable habits. **It is obvious that the ease of task or habit execution is directly correlated with the resulting reward. What's not so obvious is the requirement of the immediate and physical nature of the reward.**

‘Future me’ would really appreciate cleaning the portafilter in the example above, but I’m honestly not motivated to perform all those physical actions for just ‘future me’. I need an immediate and physical reward. In this case, the reward is simply the appreciation of the smell of coffee beans as I clean up and the visual satisfaction of seeing the filter set neatly in its place to dry.

The key insight here is that this reward is *necessary* but not sufficient to build this habit. An appreciative ‘future me’ does motivate ‘current me’ to stick with the habit, but what I really require in the moment of execution is an immediate physical reward.

Many habits you may perform on a daily basis are associated with immediate physical rewards *and* they benefit you in the long-term. Specific background music can instantly energize you to work more efficiently and keep your house tidy. A warm shower can at once make you feel more relaxed physically and mentally. The minty taste and smell of toothpaste make you feel immediately fresh. The smooth, all-encompassing feel of soap suds while you wash your hands continuously provides feedback that you've thoroughly cleaned them.

All these habits generally support the fact that you are a clean person with your proverbial sh-t together. The book *Atomic Habits* by James Clear does an excellent job illustrating the value of building habits that support this higher level association with an identity. But it's the stories behind the taste of mint and feel of suds for example that have resonated the most with me. The more I internalize examples like the ones above, the more I believe that these immediate rewards are essential to the execution of paralyzing tasks and the adoption of desired habits.

The physical rewards in the examples above obviously appeal to hearing, taste, touch, and smell. However, visual rewards are probably the most common and more difficult to identify. I can attest that an *a priori* investment to identify immediate visual rewards for specific tasks can pay valuable dividends when it behooves you to act.

For example, the ability to glance at a dashboard that precisely summarizes the state of my liabilities (eg. balances on my credit cards) and my assets provides fuel to perform a lot of mundane tasks related to personal finance management.

The Power of Obsidian for Personal Finance Accounting

A direct approach to managing your money in plain text

medium.com

As I write code, the colors of text in my development environment, the monospace font I'm using, the green checkmarks accumulating as tests pass, and the minimalist organization of windows all serve as visual rewards that provide momentum in the process of engineering software.

It is the anticipation of a reward – not the fulfillment of it – that gets us to take action. Interestingly, the reward system that is activated in the brain when you receive a reward is the same system that is activated when you anticipate a reward. This is one reason the anticipation of an experience can often feel better than the attainment of it.

— James Clear, *Atomic Habits*

Atomic Habits also summarizes well how the *anticipation* of physical rewards can be more powerful when developing a habit than the reward itself. Taking it a step further, the best physical rewards often manifest themselves when a combination of rewards (like the ones above) cross senses and are delivered in a short time window in the same environment. If you've ever found that you can get a lot of work done while listening to your headphones at a cafe, library, or well designed office setting, for example, multiple rewards are likely helping you be productive in the process.

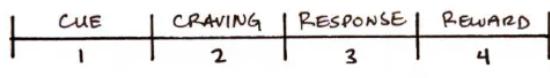
Intuitively, the anticipation of a high reward environment like a cafe or library can motivate you to do certain tasks, but you may need to remind yourself that lowering expectations and affording for serendipity may result in the most ideal outcome.

For example, you may experience a burst in motivation when anticipating going to the library to do work, but when you arrive, you're less motivated because something about the environment is off (eg. no seats are available) or your reward is too predictable. Therefore, after you anticipate the immediate physical reward it is likely best to enter the situation with a sense of realism and adventure in the face of inevitable uncertainty.

Atomic Habits

Fig 9

THE DOPAMINE SPIKE



A)

Anticipation

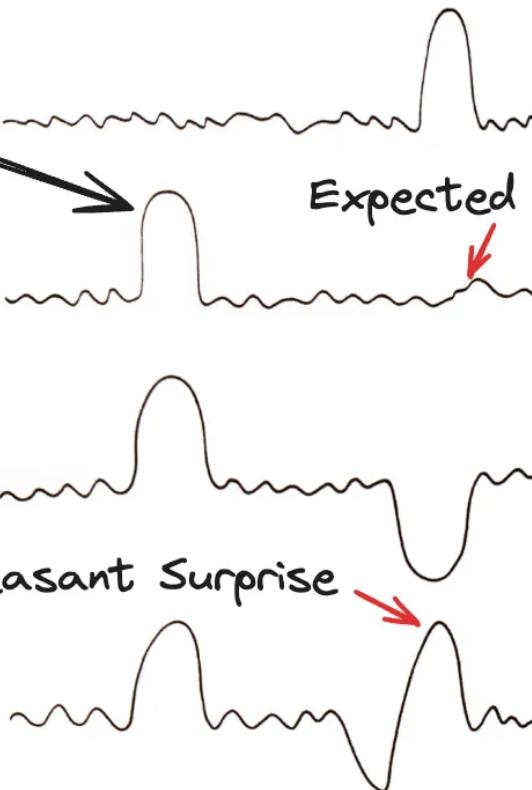
B)

Expected Reward

C)

Pleasant Surprise

D)



When you lower expectations and afford for serendipity, you exploit the fact that when you expect a reward, the actual reception of the reward is less satisfying. However, the science does tell us that if a reward comes unexpectedly (eg. it's delayed in time or the nature of the reward itself isn't quite what you think in a good way), you get essentially the same benefit as the anticipation. Therefore, the prescription to anticipate, but lower expectations essentially maximizes ultimate satisfaction.

Listen to yourself

I think this more or less proves that the development of bracketing patterns serves to package up a behavior that the brain – and the animals – consider valuable and worth keeping in their repertoire.

— Ann Graybiel, “Distinctive brain pattern helps habits form”

Naturally, the time of day, your mood or a host of other factors will impact how easy or difficult it is to execute a task or build a habit. What's not so obvious is exactly how you can use this to your advantage. Another stand-out fact: during habit formation: the same physical area of the brain is activated at the start and end of the execution of a habit *regardless of what the habit is.*

This phenomenon is called “task bracketing”, and I believe two key statements related to habit formation derive from this observation:

- While the task bracketing part of your brain actively serves as ‘headquarters’ to start and stop the execution of *existing* habits, you are primed to experiment with the execution of *new* habits. (habit proximity)
- As you experiment, certain *kinds* of habits are easier to juxtapose depending on the state of the rest of your mind. (habit type)

The first statement underscores why grouping tasks by their ‘proximity’ as discussed above works. As I place items in my grocery list I am essentially in “habit execution mode” and am exercising that part of my brain. It is more natural for me to execute a newer habit like cleaning the portafilter around that time. In fact, either habit could be at various lev-

els of being “established”, but the fact that they are both already at some level of habituation means that they have the potential to feed off of one another.

The second statement on ‘habit type’ builds off the following quote from Andrew Huberman in the excellent solo podcast episode “The science of making and breaking habits”:

It's not the particular time of day per se that's going to allow you to get into a habit, and form that habit, and consolidate that habit. Rather, it's the state that your brain and body are in that's important to anchor yourself to.

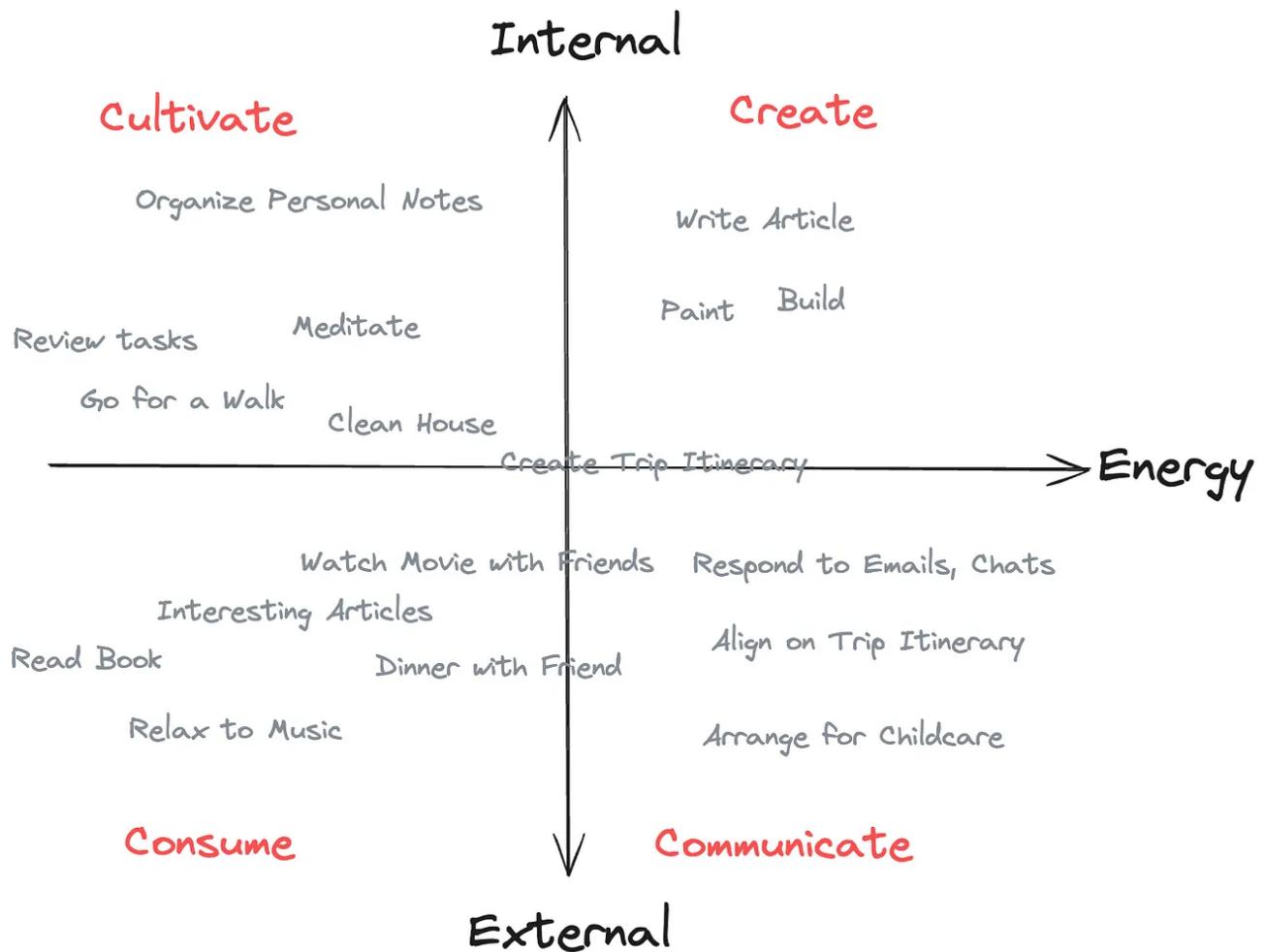
Huberman offers a useful framework to help build habits based roughly on the time of day and difficulty required to perform associated tasks. He explains how your state of mind is literally chemically better suited to handle difficult tasks and build habits around them during the first part of your waking day rather than later.

In his framework, the type or kind of habit is measured by its difficulty in terms of motivation to perform a task or anxiety associated with it. He calls this difficulty ‘limbic friction’. However, this is but one of potentially many useful dimensions to group tasks by.

For example, I have found the following *two* dimensions particularly useful:

- Motivational energy required or limbic friction
- Internally (vs externally) driven

Broadly, the type of tasks can fall into the following four categories across the two dimensions as depicted by these quadrants. I call them my ‘four natural actions’:



Tasks belonging to the cultivation category generally require a more internally driven frame of mind but, for me, aren’t that difficult to start doing. Cultivation tasks include physical exercise, keeping myself and my surroundings clean, nurturing relationships with family and friends, practicing a hobby or skill, etc.

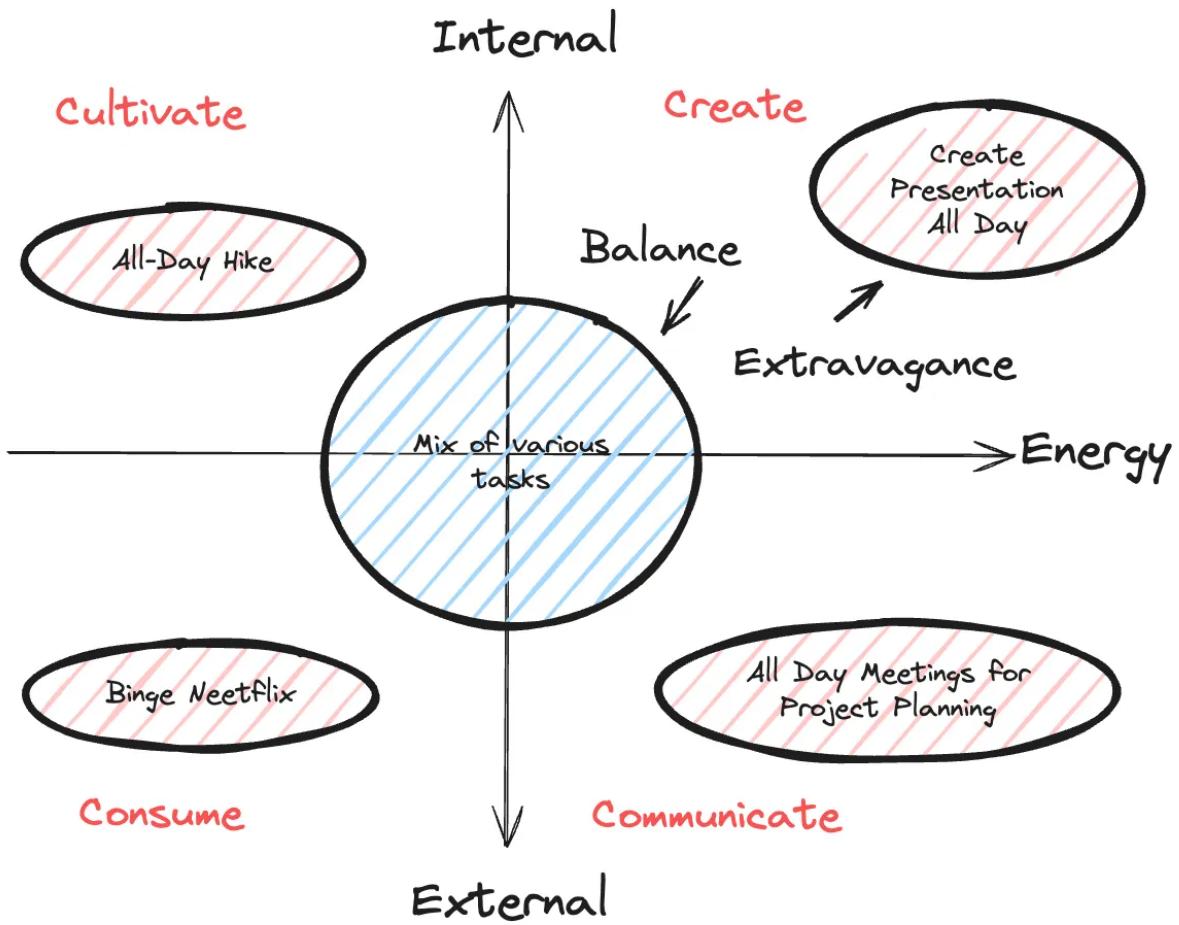
The creative quadrant contains tasks that generally require a lot of motivational energy to produce something meaningful. They also tend to

require deep focus and an internal frame of mind for me. They ideally result in a product that is a novel combination or remix of ideas that reveals something fundamentally true about our personal nature, or nature itself. Examples include writing code, creating professional documents, crafts, and creating music or videos.

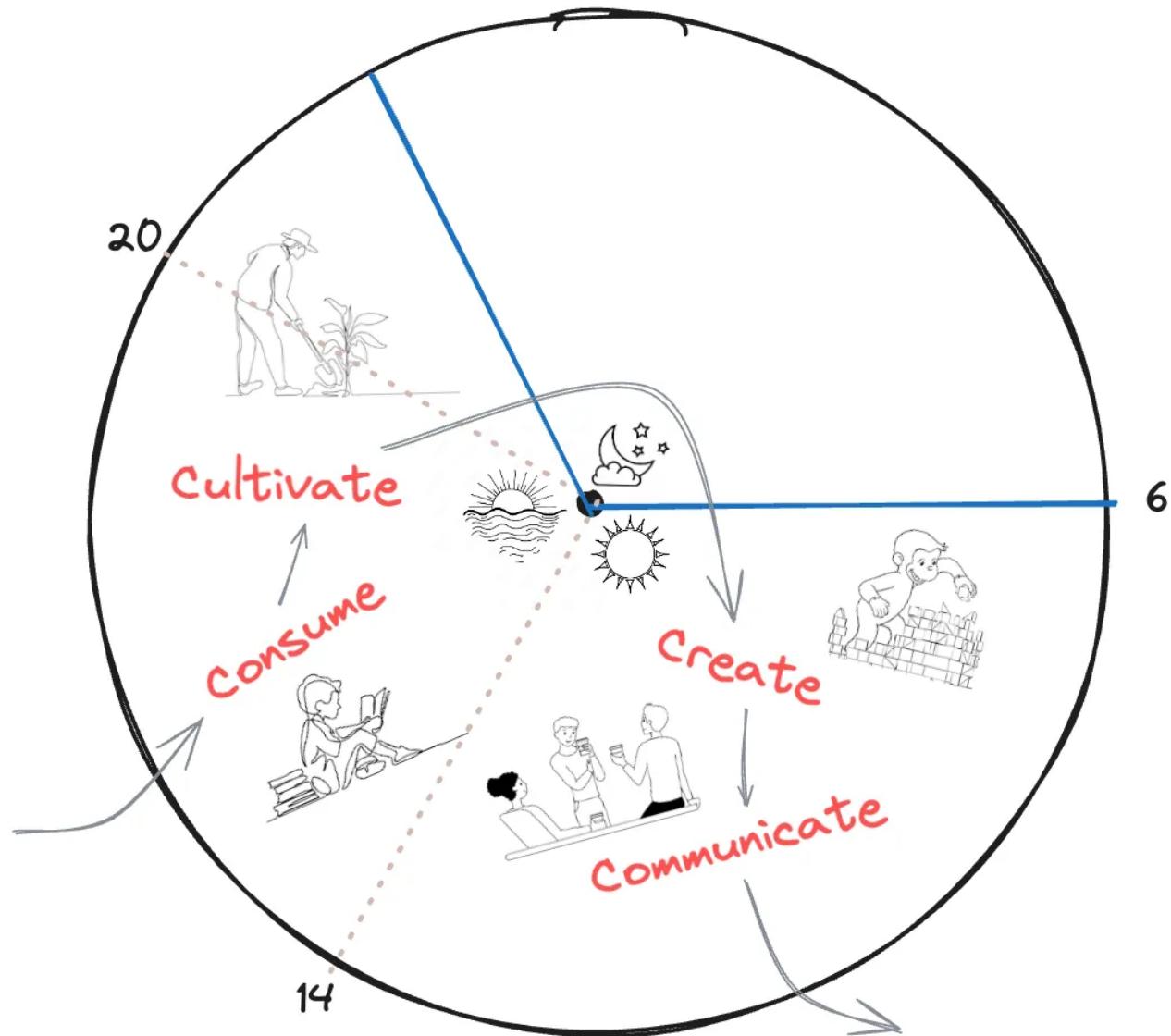
Communication tasks are associated with a reasonable amount of motivational energy or limbic friction for me. By their nature they involve other people and a reasonable amount of interactivity. Examples include synchronizing on logistic details, identifying important topics to discuss with specific people, and updating others on the status of your progress on projects or tasks you are working on.

Finally, consumption tasks generally come from a desire for me to be either entertained or educated from external sources. They are generally easy for me to start working on and thus do not require much motivational energy. Examples include, watching entertaining movies or television, reading books and articles on general subjects of interest (as opposed to cultivating expertise on a particular topic).

As I listen to myself, I sample from tasks in a quadrant that feels the most appropriate. This sampling approach provides some structure to align tasks with my state of mind and otherwise affords flexibility on what to work on. Most days I feel best when tasks are balanced across the 4 quadrants, though occasionally tasks require enough focus that an entire day could be spent just in one quadrant.



These four categories can also be overlayed across the three phases of the day in Huberman's framework. Generally the phases of day line up with the 'motivational energy'/'limbic friction' dimension. A number on the outside represents an hour in the day, the blue lines indicate sleeping and waking up times, and the dotted lines divide up the phases of the day:



It can be very satisfying to group difficult tasks and habits in the way I just described. These tools motivate you listen to yourself in a very practical way, and they provide much needed balance for the beast inside you.

Lean on tech for everything else

The vast majority of this article has been written with your memory in mind and science-inspired tools to help you overcome friction when

accomplishing difficult tasks and adopting new habits. However, for me, technology is critically important. The key is to first rely on technology as a vital extension and assistant to efficiently unload and repopulate your working memory. Second, to help reduce friction when getting tasks done. Here's how I do it at the moment.

To repopulate my memory I use a combination of tech in plain text and visual drawings. Details of how I capture everything in one place are discussed in the “Capture to do” article.

In plain text, I capture what I call ‘text doodles’: comma-separated lists of 3–5 things at once. Often they will be used just once or twice and left as completed items in my daily log. Other times they can be resurfaced or repeated organically to become something useful in my long term memory.

For example, I often remember items to get from the grocery store in groups of 3 to 5 roughly organized by spatial location of items and I've found it's easy to keep those doodles in mind when shopping. I can't remember all my grocery doodles, so using plain text tech to reference them on occasion helps, but I can still use my working memory as efficiently as possible.

bank, gym, trader joes, home
spinach, cheese, berries, avocado
milk, half-n-half, sour cream
oatmeal, cookies, bread

I've also often used digital doodles to outline things I want to cover in meeting agendas and follow-up tasks. There's something so basic and powerful about clustering a few simple items on one line of text and repeating this process throughout the day. Simply grouping items in this way encourages me to remember them and even play with and recombine ideas across doodles.

The second tool to repopulate my memory builds off the four natural actions quadrant plot above. I've found its useful to capture tasks visually in the quadrants above in my log (I currently use the weekly log entries in Obsidian for this and Excalidraw to create the pictures). The weekly timeframe is convenient because it's fine-grained enough to capture mundane tasks but flexible enough to allow them to span multiple days.

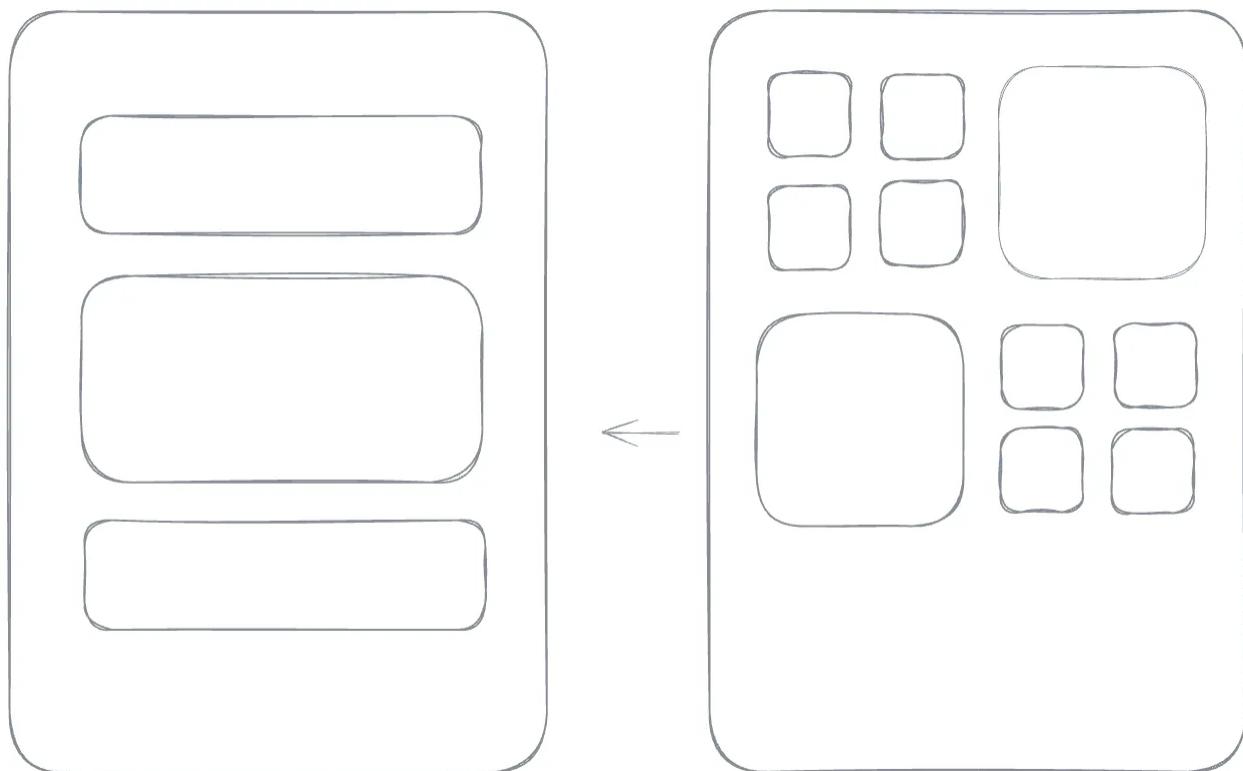
Unlike other forms of keeping a log, these doodles are somehow more enjoyable for me to look back on and reflect. They reflect snapshots of what I liked to play with in my mind on weekly and daily resolutions. And they provide inspiration for future play.

Fitts's law says that the time to move to a target depends on how

big it is and on how far away it is. As you are creating new UI designs, think about optimizing both these variables by creating well-spaced, big targets and positioning them so that they are close to the user's most probable prior location.

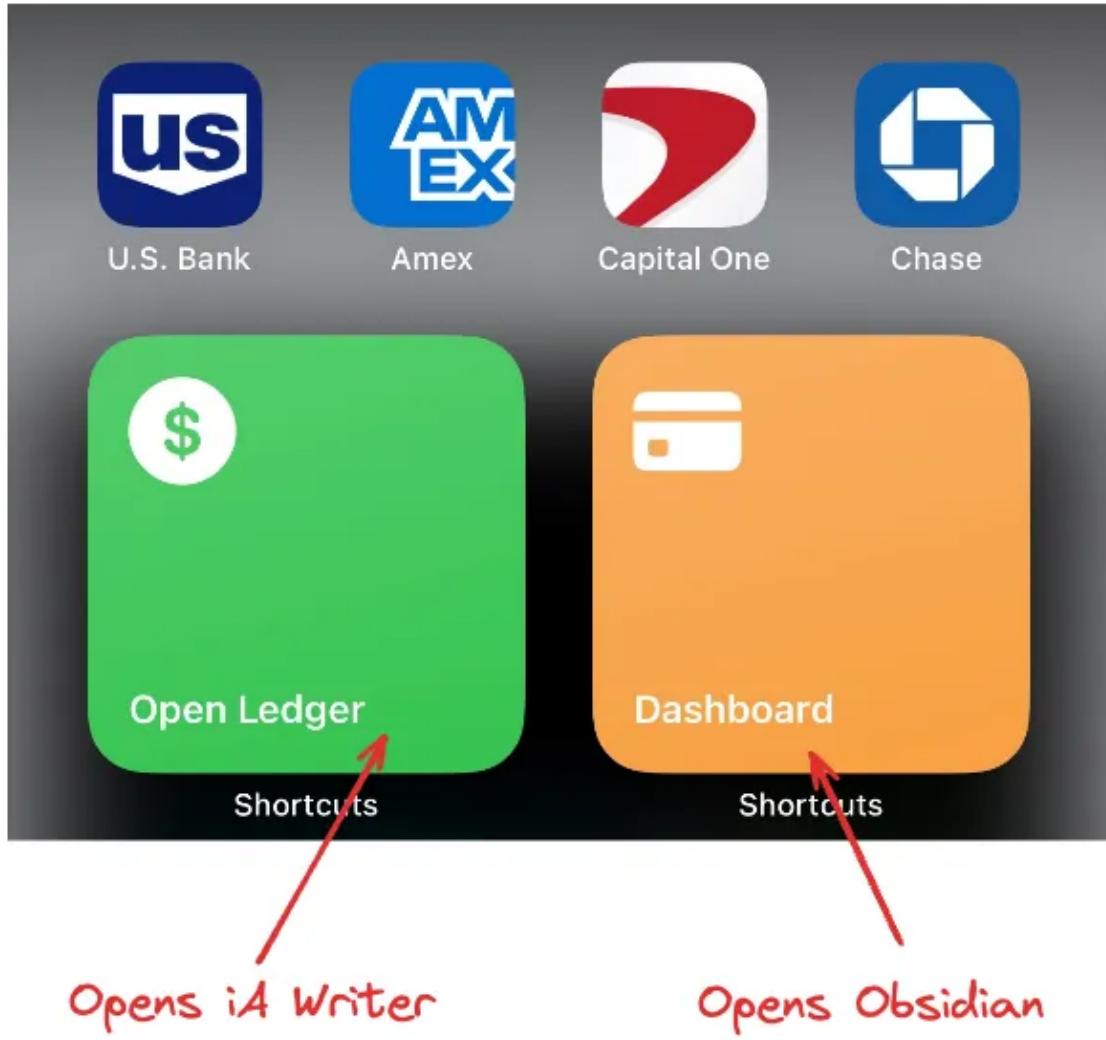
— Raluca Budiu, “Fitt’s law and its applications in UX”

The primary tools I use to reduce friction when completing tasks are my smartwatch and phone. App designers exploit the beast inside of us by designing addictive apps that aren’t necessarily the best ways to use our time. SB turns the table. It may not be obvious, but our home screens are user experience playgrounds, and we get to be the designers!



I design my home screen to help facilitate the execution of tasks and

development of habits. For example, tasks for me to update my financial ledger and check the dashboard are easily accessible via big icons next to smaller icons that allow me to access data from individual banks:



Obsidian is generally my go-to app for organizing anything in plain text, but when I am deep in any given task, I almost always prefer using iOS shortcuts directly to the appropriate plain text using the iA Writer app (eg. my financial ledger, my daily note, any important text file associated with what I call my “finish line sprint” in a project I’m working on). iA

Writer on iOS opens any plain text file incredibly fast and has an immediately visually rewarding user experience when writing on the phone or on my computer.

I've found that using plain text and designing my layout in the ways described above actually encourages me to work on certain tasks and develop habits I would otherwise find much more difficult. The article on Fitts's law mentioned above provides a few easy-to-digest and simple tips to help you design your home screen in a principled way.

I'm not suggesting to swarm your home screen with productivity apps. I'm just saying that, when used in the way I just described, technology can be genuinely be a companion we rely on to support how we naturally work.

Conclusion

The title of this article is a tongue-in-cheek reference to the movie *The Martian*. The protagonist played by Matt Damon is stuck on Mars and he is hell-bent on using the most powerful tools at his disposal to survive: science and grit. He proceeds to find all sorts of fun ways to solve his way out of Mars all with the hope of getting back to the comfort of home.

“Satisfy the Beast” is a framework that recognizes that we are human and from Earth. We instinctively play, require reward, and, ironically, stay paralyzed if we don’t stop and listen to the state of our minds. Within our limits, we flourish.

SB provides science-backed tools you can literally keep in your mind

while going about your day. Always play with a handful of things in your working memory. Search for the immediate physical satisfaction in almost everything you do (and set expectations accordingly). Mindfully choose to execute on tasks you are best suited to work on at any given time. Throughout this process, technology can be your friend and you can be empowered to design simple and intuitive ways for yourself to conquer difficult tasks and build new habits.

Personally, SB is the result of a long journey. For me it's not enough to just build a bunch of good habits and do a bunch of useful tasks. In fact, that kind of 'productivity' is just a recipe for me to not be motivated and overwhelm myself. I have also realized that I don't need some sort of fancy underlying motivation or grand purpose either.

Using a little bit of science as motivation, SB helps me to surface my own needs at a basic level. On any given day, I can perform many tasks and practice building potentially many habits. I can alternatively choose to focus and go very deep into a particular area. In any case, it is easy to approach each day with a sense of poise with my actions in the SB framework. My hope in writing "satisfy the beast" is that this sentiment and the tools that come along with it may resonate with you as well. 😊