

CHAPTER 1: Exposition

Sometimes, taking a step back to contemplate our existence in the world can stir feelings of anxiety. However, I propose a method designed to have the opposite effect. I call this technique "Spatial Meditation". It's a concept that aligns naturally with the mental processes we often engage in. Whether we're plotting a journey or delving into another's narrative of past or current experiences, our understanding inherently involves considering the spatial context. This encompasses environments, objects, life forms, and people. We all exist as physical entities within space. By meditating on the space that surrounds us, we can gain profound insights into ourselves and our world, and simultaneously achieve a sense of tranquility and unity.

Now that I've presented my initial pitch, let's delve deeper. This first chapter is structured as a dialogic conversation, responding to a range of simple yet pertinent queries. This should provide you with a more comprehensive understanding of the effectiveness and relevance of this technique. If, however, you're eager to jump straight into the practice, I suggest you skim through the concluding section of this chapter and move on to chapter 2, which explores the process in more detail.

WHAT IS SPATIAL MEDITATION?

Spatial Meditation is a method that encourages awareness and acknowledgment of one's mental representation of the physical world. The practice entails a series of cycles, each involving the identification and release of perceived physical matter, synchronized with the practitioner's breath. Beginning with small, localized cycles, the meditator progressively broadens their awareness of the physical world until they reach the limit of their available time, personal satisfaction, or the boundary of their knowledge. Each cycle may stimulate associated episodic memories tied to specific spatial contexts, often hidden in the recesses of the subconscious mind. Essentially, this technique provides guided imagery meditation to access the unconscious links we've established with the physical world.

WHY DID YOU START DOING IT?

Since the beginning of college, I've always had a fascination with the limits of the human psyche. My first experiments in meditation began when I was in graduate school. I heard that altered states of consciousness could be achieved with enough practice, but I never got to that point. Instead, I tried to find ways to clear my mind. The method that stuck for me was where I would think abstractly about all of the thoughts in my head at one time. Then I would breathe in air to basically bind with my thoughts and breathe out the air to release the bonded thoughts. The idea was to basically rinse out my mind with controlled and purposeful breathing in a synchronized way. I didn't practice meditation much, but it was my default method when I felt like I had to for some reason.

I then heard of Vipassana meditation when Jack Dorsey, founder of Twitter, described his relationship with the practice. From what I vaguely understood from his account and online sources at the time, one tries to acknowledge all that's around them in their immediate vicinity. After further exploration, my interpretation of Dorsey's description was fairly close. The practice is to not obsess, not repress, but observe every input to the body and mind, whether it comes from the outside or internal thoughts. The idea being that any input can illicit a physical output, and by observing inputs then the outputs can be neutralized with enough practice. When I first heard about the practice, I didn't research it all and just tried to do it. I'm looking more into it now that I'm writing on the subject and hoping to one day go to their 10-day retreats of nearly constant meditation. Anyways, I recently started trying to meditate again due to curiosity, so my first experience was a combination of two meditation methods I came

into contact with over the years. I started thinking of my local environment and then letting it go.

I found it to really help clear the mind because each breath in helps me focus on a single set of information. When I breathe out to release it, I find it to be somewhat easy since all the information that I drew in with the breath before was temporary. I'm not sure when I started expanding my range of space, but I do know it was in 2022. I tried going further and further in the acknowledgment of the space around me. I must have had time on my hands because I eventually found myself to the edge of my knowledge of the universe, where I struggled to think past the Milky Way. Every time I breathed out the information in my head, I felt both solitary in the plane of existence, but paradoxically one with all that I know of existence. It was an experience and feeling that was so easily accessible and holistic, I felt it was important to keep on trying with this method. So at first I kept trying the same thing, basically going to the edge of the universe every time, and each experience started to become a little different. Each time I expanded in space I would often realize a reflection of the past that is associated with the space temporally in my mind. It wasn't until later I learned about the term episodic memory, and currently I believe these memories are triggered by the associations of space and time in some way. It came to be that my pathway could often be different as I expanded, like I forget about the existence or whereabouts of some country I know little about and pass over them, or different episodic memories come up when focusing on the same space, perhaps based on my mental state at the time of meditation. Along the way, I started experimenting with different places and methods of meditation such as using metronomes, different body postures/movements, sensory deprivation devices,

and anything else I could try to enhance the experience, which I will detail in chapter three of this booklet. One that stands out completely compared to what most of this book consists of is the method to not expand outward, but reduce and explore inward to myself or other entities (like a pet for instance). The effort to reduce the being of an entity seems to be at least finite, but when thinking of the material in general it's incredibly hard to reduce to every known aspect of it, which I have still yet to get past general body parts (so far). Although, I cannot say that this method is completely original to me either. There is this guided meditation session on an app that my partner and I use sometimes that helps us fall asleep with possibly a 95% or more success rate. It resembles the reductive inward meditation, but really only focuses on body parts where the listener is to isolate and acknowledge each body part and move onto another until they reach the whole body, which is often called a body scan. In my experience, I am asleep before I reach my whole body. And when I tried to fall asleep without the guided meditation and using my own methods I was successful in doing so, and I did not reach the full body acknowledgment. I still have to try several instances of this meditation on myself and other entities in the future, and will detail them in chapter three.

WHY DO YOU THINK IT IS GOOD?

I think it's an enlightening experience and is worthy of sharing with people with the hope that they might find use for it as well. I like how it works with our episodic memories and

our beliefs of space within our universe. Where you can think of a location while meditating and then memories associated with the location spring from your consciousness in a flash. They are often so fast that to try and describe these flashes of memory would take 10-20x more time to explain with words than to experience it through the spatial imagery of the mind. Episodic memories could be people, items, locations within the locations, or periods of time that you've experienced in general. When I go through the world during meditation, I often think of memories that I haven't thought of in years, but somehow they are still stored in my mind. It's that depth of mind that makes me curious about this technique. Or I at least want to know how we piece this information together, does it start with the space at first and then build up from there? I think so, because when I say space or locations or entities, they're all the same in the sense that we are, at the very least, physical material. That requires the use of building a physical model of the world in our mind at that time, and I imagine a foundational place to start would be the setting. This could lead to a flooding of associations with the location, where the highest priority could be first in line. But to know the importance of whichever episodic memories emerge first is still to be determined.

Regardless of the importance of the associated memories when meditating about spatial locations, the act of meditating has its benefits as well. Clearing the mind with every cycle allows me come to a focus periodically. This focusing on material and letting it go has helped me feel calm and walk away from the session holding onto clarifying moments of how to proceed with my own life. The other post-meditation benefit is the immediate sense of a good tingly feeling both mentally and physically. It could just be

from the overloading of oxygen from the frequent, consistent breathing while in a rhythm. I've definitely felt similar to this feeling during the couple of Wim Hof breathing sessions I've attempted, but the technique I'm talking about is less strenuous and is more focused on the mental than the physical abilities.

ANY REFERENCES TO OTHER WORKS?

I like the idea of spatial meditation being somewhat inline with the concepts from active inference. Roughly, active inference is about how we as entities can model the world, act in the world, and observe certain aspects of the world (limited by color, hearing range, etc.) where we have to understand that there are hidden states in the world that are yet to be completely understood, like gravity for instance. The theory shows how these concepts are all interrelated in a near constant loop that constitutes our cognitive selves at the present moment. There is then this concept of the free energy principle which more or less states that our cognitive perception is trying to generate our model of the present using a low amount of energy, or otherwise said, "the path of least resistance." We think of the path of least resistance when planning our actions for a route or setting tasks to accomplish a goal. To relate this all to spatial meditation, I believe that when we model the information of a specific location we also have a path of least resistance to our memories associated with that place. Also, as we'll come to see in chapter 3, when we are expanding from one RR-cycle to another, that growth will likely be in the path of least resistance.

When I'm speaking of associations, this style of talking is inspired by Carl Jung and Robert Jordan. This kind of meditation could possibly be classified as a type of active imagination. It differs because there is not a dialectic dialogue between the unconscious and ego as described by Jordan, where it is mostly done in imagined locations and one's ego is involved in a conversation with a mental archetype that represents one's unconscious. It's more like guided imagery, where we feel emotions and memories come up that are associated with the images. The image (or even pixels) we are using as a guide is the space around us in an almost finite reduction of the world. Jordan mentioned in his book *Inner Work* that Jung referenced a set of guided imagery meditations created by St. Ignasious Loyola for experiencing parts of the Bible. I've yet to participate in or read beyond the introductory pages of the book he referenced, *The Spiritual Exercises*, but I imagine that spatial mediation is somewhat similar to this style of mediation. It's not an easy thing to do, but more information on this could be found through Jordan's book "Inner Work".

Another great work that dives into the importance of the spatial mind is *Mind in Motion* by Barbara Tversky. There are many studies and examples she details and it helped me think of the foundation of thought in general. Usually when we think of spaces it's from a perspective we recognize. If we were to think of a room we know, then it would be from a point of view that we've experienced before, rather than looking down from the ceiling as if we were hanging there. When we expand our perspective to larger spaces like a town or village then we maybe think of it from a perspective we know from pictures taken from satellites like Google Maps. It's hard to think of such a space from a smaller perspective just because so much is out of view. Like when we try

to think of an entire city from the perspective of a bus stop there's really not much to take in given the density of buildings and the distance in which our perspectives see large objects as small.

Thinking of space in general makes sense because it's such a fundamental construct of our reality. Words are abstract representations of spaces and actions and so on. Numbers and math are also abstract representations of our reality (usually) and how to quantify our life. The space itself is finite and energy is supposed to be indestructible and constant. We as humans have the ability and motivation to change it as much as we can, but on a planetary perspective, we don't do too much and it's hard for us to make major changes. Yet, I'm sure a couple hundred years of constant expelling of certain byproducts could have a sizable effect. Especially if there is the destruction of a sizable piece of the cycles in which our planets needs to operate in a static sense.

Basically, we absolutely interact with our world every day and we get to know it more and more, even if it does become monotonous.

WHY CYCLES?

Cycles in general are associated with this meditation. I find them important because there are so many cycles that we as entities need just to live. A big one is the cycle of our human heart, we do not want this cycle to ever stop. In some philosopher's theories

(like Zizek, that crazy guy), he says that our will to live is driven by the knowledge of our eventual death, known as the death drive. Who knows if he's right or not though.

Another cycle to think about goes back to active inference, where we are involved in a cycle with the physical universe itself. Our thoughts and actions attribute to the reactions from the world around us and the hidden states within it. Till the day we die, we will be acting upon the world and altering it in some way that the world can respond. Some people get anxious when they either can not participate or are obliged to participate with the world for their own well being. I'm uncertain how to account for that anxiety, but the thoughts within us regardless help drive this cycle. Last thing I have on cycles is the concept of the circle. Where I can probably just talk about the importance of Pi (3.14...) and how it can help recognize infinity. The real lastly, we want to be able to synchronize our breathing with our imaginations. Maybe this could help us resonate with the world as we know, or at least with our model of the world.

HOW DO I START?

Like most forms of meditation, you want to start in a mostly quiet environment. It's good to know where you are too, like you could be at home or at work during a break. Find a place to sit or lie down comfortably for an extended period of time, perhaps set a timer for how long you want the session to last, 15 minutes is a good starting point. Once you're ready, close your eyes and start taking a long breath in, and at the same time, try to visualize all that surrounds you. Don't dwell on any memories that pop up in this time

and keep moving on because more memories might pop up as you get into the details.

The idea is to try and let as many memories flow past you because you really don't have to overthink any of them. If they pop up, then they are just in your mind and can disappear as easily as they appeared. And if no memories pop up at all then that's fine too. Once you've breathed in the maximum capacity your body will allow, slowly breathe it out at around the same rate as your previous breath in. As you're breathing out, let all the visuals of material and memories out with the breath and clear your mind. I like to think of the air connecting to the ideas in my mind, and then I breathe both the air and ideas out. To help clear my mind with each cycle, with my eyes closed of course, I try to look ahead and focus solely on my closed eyelids because it is literally the first thing I can see when I switch back to perceiving the physical world. It helps me come back to center and also my sense of self.

After this first breath cycle, you breathe in again and think of the space that is beyond the space you were thinking before. The same process then applies to how you think of the new space, handle memories flashing, and then expelling it all from your mind on the breath out. Continue these cycles for as long or as far as you deem necessary.

CHAPTER 2: Elements

There are not many elements of spatial meditation, but they are all important to understand one's goals and limitations in a meditation session. Breathing, recognizing, and releasing are all obviously part of the Recognize-Release cycles. Within those cycles, shocks of episodic memories will appear sporadically throughout the session, so we'll talk on suggested ways to deal with them and go into what they may or may not represent. I will also talk a bit about the exploration of our knowledge of the physical world and limitations that may incur in both the macro and micro recognition and release.

BREATHING

One of the simplest acts we can accomplish is breathing. If you're reading this now then I'm sure you're a master at it or at least done it enough times to get to this point in space-time. Let's talk a bit about why it's important and break it down. We breathe in through the mouth, nostrils, or maybe both if able with the hopes that there is a good amount of oxygen around you. Lately, it's been a mix of around 20% oxygen and the majority of the rest is nitrogen and carbon dioxide in our atmosphere. When we breathe in, the oxygen molecules go to our lungs where there is an interaction between the blood and the atmosphere breathed in. The trade goes like this: the blood takes the oxygen and returns some carbon dioxide that it has produced. We send the carbon dioxide out, and this happens until we can no longer do so. The carbon dioxide is returned to the atmosphere along with the other molecules that the lungs did not help facilitate a trade with, and the oxygen begins to flow through the body with the help of

the heart's pumping action. In fact, this seems to be all from the heart's doing, where it's beating allows the blood to flow constantly throughout the body in a way that does not need to synchronize with the breathing cycle, but is dependent on this cycle to continue on. What would be cool to do, if possible, would be to try and synchronize the heart beat with the breathing in some way. Or at the very least, breath in such a constant cycle, that the heart beat is also cycling constantly at a steady beat. The idea would be to reduce heart rate variability to a point where it stays at the constant beat that does not have to work as hard and conserves energy because the mental demands from breathing in a cycle puts it into a state in which the heart can reach an equilibrium. It's hard for me to definitively say that putting the heart into an equilibrium is necessarily a good thing, but when I think about it in a way such as this, it seems like an obviously good thing. Regardless of how the heart reacts with spatial meditation practice, I would advise keeping a constant rhythm, but also do not be afraid to let your body breath automatically if desired. Where with the inward breath attempt to recognize all the information one can of the space they've allotted for recognizing. On the breath out, release all of this information in the same manner where you end up back to realizing just yourself in the context of what you scanned so far.

CYCLE MODEL

The Recognize-Release (RR) cycle is a key component of spatial meditation. This cycle can be modeled with somewhat easy to understand graphs that I will walk you through.

To start, we'll think of the speed and direction of the air we are breathing, where we are trying to synchronize the in's and out's of our breathing with the recognition and release of imagined materials within our thought processes, respectively. This cycle would be synonymous with a sine wave with the horizontal axis being time and the vertical axis being either the speed of air or speed of the imagination modeling an aspect of the world.

The cycle begins at zero where one is not breathing in or out. The next instance is where one starts to breathe, slowly at first, but as time goes on the speed at which one inhales gets faster, but reaches a peak and starts to slow down again when one can breath in no more air, where the speed reaches back at zero. This part of the cycle is all in the positive part of the vertical axis, a kind of upper arc. The next half of the cycle is breathing out, which is basically the same as breathing in, but the opposite direction with a negative velocity value. I think when we're imagining material during spatial meditation, the speed at which we recognize and release is essentially the same. There of course could be different slopes to the signal or even more detail, but in its simplest and clearest form, I believe this to be inherently true.

There's both a positive speed for air coming into the body and the recognizing of material in the mind, then there is an equal expulsion of breath coming out of the body and releasing of material from the mind. So if we have a curve that represents speed, what else can we do with it? We can actually back out to the amount of breath or

imagined material that happens in the same period of time of a cycle by doing an anti-derivative of the equation in Fig. 1 to:

Where if we assume the value of M is equal to zero at time zero, then that gives us the equation in Fig. 2. So we're assuming at the peak of the second graph one should have recognized their material and then one releases it on the back half of the cycle. With the beginning and end being zero, it seems as though when we are breathing or going through the RR cycle, one is trying to reach the infinitesimal moment of having no air and releasing all knowledge from one's mind, essentially being void both physically and mentally.

The value of two being the peak of the second graph was not something I thought of initially, but from times I've thought about this process before, I can at least try to make up an excuse for it. In an ideal spatial meditations session, one would strive to think of their entire universe while being in the universe itself, this makes for two universes happening at the same time, one within the mind of the meditator and one happening during the present. It is clearly impossible to truly achieve this feat, if anyone could do it, they would be god-like. Instead, there must be some kind of factor on a normalized scale of zero to one that can help scale the actual amount of material we are able to model in our mind at differing perspectives. Near the end when one is at a universe perspective, the universe which one tries to model in their mind will absolutely not be anywhere near the level of detail necessary to represent all material, so its value would be closer to zero. At closer spatial ranges, that scale factor would increase

because we will recognize more detail of the material we try to model. But if we were to try modeling material at a microscopic perspective then that scale would decrease towards zero again. We will talk more about this scale factor in the next section.

PERSPECTIVE AND SCALE

To imagine any set of physical material demands an assumed perspective to perceive said material. This perspective, in turn, creates a limitation or converging boundary which limits the scale of perception. One of the greatest examples of this concept was described by Benoit Mandelbrot with his famous question and paper: "How Long is the Coast of Britain?" The answer: it depends from what perspective one is measuring (or perceiving) it. Let's say you're looking at a satellite image of Britain and you measure the length of the coast line depending on the number of pixels that are on the edge of the coast. You'd be able to say each pixel translates to some unit of length, and then you count the pixels and it gives you an estimate the coast's length. But one would be able to measure a longer length if they were to instead measure by walking along the coast with a foot-long ruler and measuring at each part where the water meets the land. One would be able to return an even larger length of the coast if one measured inch by inch, and even larger lengths as the unit of measurement gets smaller and smaller. The concept Mandelbrot developed is a way to measure "roughness" and is used to quantify and categorize fractals. So how does this apply to perspective and scale during spatial meditation? As one is moving through their model of the world, they can choose which

perspective they would like to model from. It's generally from a perspective that matches one's point of view when modeling their immediate surroundings. As one expands out towards their neighborhood or city, the perspective has to come from more of a bird's eye view and the units of measurement increases to match whatever details are legible from said modeling perspective, which then decreases the amount of detailed information that one can model in their mind, bringing that scale factor talked about earlier closer to zero. The same scale factor goes towards zero as the perspective gets more microscopic due to the amount of material information that is ignored when trying to model the physical world, but I think an argument could be made that the scale would actually get closer to one (but never reach it) as one gets more and more microscopic, but they would have to be pretty detailed and with a lot of time on their hands to try and actually get to that point. So let's talk a little more about this detail in the next section.

RECOGNIZING

Is the reason that we are not able to scan to a value of 1 because we lack the true knowledge of all that resides in the space around us? That is to say there is often a threshold on the scale of detail that we use to limit ourselves when first thinking or perceiving an environmental scene, but that absolutely depends on context of the available knowledge and depth of thinking for each individual. I presume there to be a

finite limit to what we find perceptible in the room, but there are so many finite elements that we will not be able to acknowledge it entirely in the majority of cases. Taken to extreme measures, if one were to confine themselves in a room that only possesses one kind of material, where the structure and chemistries are known, and arranged in such a way that the meditator knows every single placement of material, then the continuous RR cycles isolated in this area could possibly reach a level of one, but would certainly asymptote to a point based on the person's ability to comprehend the entire space and the uncertainty involved with electrons spinning and all the other weird quantum mechanical details that are almost too much to comprehend. We remain perceptively limited to what we can optically resolve with our eyes, hear with our ears, feel with our bodies, and so on.

Regardless of this philosophical thought experiment, there is certainly a limited amount of knowledge of the material world that is captured in the mind of someone going through the iterations of RR cycles to create their model of the world. I believe this value is an important aspect when recognizing, but does not need to be explicitly thought of during meditation, but perhaps in hindsight or as a general guide when going through progressive iterations of cycles. For when someone decides to recognize large areas with a relatively low value with each observation, then they can move on faster for each iteration. Whereas if someone is trying to get the most material detail out of a recognition, they will likely progress very slowly in space.

So it's like a trade off where you seek to compromise, with an equal number of RR cycles do you want to go farther with less detail, or do you want more detail and less distance?

So let's try to work this out mathematically and start with a couple constant constraints on time and rhythm, but we'll twist the knobs for the level of detail and the size of the spatial steps for each cycle. Where we'll have one meditation with large spatial steps and less detail compared to small spatial steps and more detail. The detail scale basically serves as a ratio for what we recognize and what don't recognize over a given set of space. As we grow the space larger and larger, the level of detail decreases with each cycle. Also, each step is mostly a function of spatial volume and can be used in different ways, which will be discussed in chapter three. For now, we will focus on the aspect of expanding outward from our own body.

Let's start out with a one minute session duration where each RR cycle lasts 12 seconds (6 for recognizing and 6 for releasing) which totals to 5 cycles during the session. This meditation was performed at my residence and will only detail generalities of the material recognized.

I started with the first session being large step sizes with low detail, listed below is the recognition during both cycles.

1. I recognize my house and immediate neighborhood block
2. I recognize several blocks around me
3. I recognize more blocks around me and major cultural locations
4. I recognize the whole neighborhood
5. I recognize the border of the next closest neighborhood

Small steps, more detail:

1. I recognize the couch I sit on and the pets around me
2. I recognize the room I'm in and the items in it
3. I recognize the adjacent rooms and the items they hold
4. I recognize the entire first level of my house
5. I recognize the entire second level of my house

As you can see, both sessions produce larger volumes of space with each cycle, adding on to the space recognized from the previous cycle. In this case, as the volume expanded we saw the detail decrease by recognizing more general abstractions of the physical material modeled. Now, let's try to understand more about how to release all this information.

RELEASING

When one thinks of meditation, the releasing of information from one's mind is usually the go-to idea for understanding it. It's a task that I imagine some meditators strive to accomplish sustainable and replicable releases of information with years of diligent practice. I'm not entirely sure to what end spatial meditation fits into this ability to completely release information, but I would hope that with enough practice it could reduce the learning curve or become a catalyst for more people to experience moments of neutral information in the mind, with nothing coming in and nothing going out. I would

think that at the beginning and end of each RR cycle would be that point. But to possibly get to that point, I believe it would take getting to the end of one's spatial limits to truly experience as close to zero thoughts as possible, because then one would be cycling between all that they know and then back to themselves. Where we could say that we are close to zero compared to the universe and have no further bounds to traverse as far as we know.

When I release information from my mind, it's almost like the exact opposite of recognizing the physical models of the world. As quickly as we can recognize, should we not be able to dissolve this information from our minds? I believe so. I try to focus on just my perception of sight when releasing because it's something that I can only stop perceiving when I am asleep in any way unconscious. When awake and with my eyelids closed I see a gradient of darkness, redness, and hints of my skin color and the outside environment. I focus on that void every time I release and find myself able to at least feel like I am coming back to the boundaries of my body. But it's hard to say if I'm actually reaching zero or not because I'm still holding memories of the boundaries of the space I've recognized so far. How can I say that I've completely released it? I could say that if I have already released models from previous cycles, then the only thing I'm holding onto are the boundaries of previous steps.

When one reaches the end of their known knowledge are left to cycle between the bounds of all they know and themselves, then I believe that's where we can learn to isolate ourselves entirely from all that we know, even if it's for briefs amount of time between each iteration. This meditation practice perhaps can give us perspective of the universe's vastness and how we fit into it. In the end of our bounds when we are

expanding outward, the only part left between our mental model and the physical world is ourselves. We can say that we are trying to match our mental model with the our knowledge of the universe and realize that we are one with the universe.

Of course, that's probably the end goal of any meditation practice or transformative realization. This is just my interpretation of another way to get there. But let's talk about what happens along the way there.

TANGENTIAL EPISODIC MEMORIES

I was reading *Mind in Motion* by Barbara Tversky and she mentioned the tangential thoughts that we usually have, even when trying to think in a linear fashion we can't help but have non-linear interjections. I think tangent thoughts are a good way to describe the episodic memories I'm talking about in this work. They're tangent because you're thinking about one concept only, the space, and then a tangential thought comes from your episodic memory of periods of time associated with that space exhibiting a clear gap in time between your present moment and the memories one is remembering.

When I've been practicing this meditation technique, memories pop up when modeling certain locations and oftentimes they are emotions or stories associated with that space. When material is recognized, what emotions, stories, and other kinds of knowledge would be associated with it, and could there be an infinite amount? I would honestly imagine there to be a finite amount, and this would increase someone's

chances of reaching a level of detail equal to one when trying to recognize a particular set of material.

And just to reiterate about the level of detail, the value of one means that the mental model in someone's head aligns perfectly with the space of the world that is being modeled. Saying that, I will continue to presume it is only material that is involved with recognizing throughout all aspects of spatial meditation. The memories that pop up are part of our lives and knowledge, but they also need to be cleared out. They are projections of our past experience of the world. Often times, they could be false, as can be observed in many eye witness testimonies in US court cases. Other times they could be memories of spaces where we only heard or learned of information from a source outside of our first-hand account. An example from one of my own spatial meditations is when I recognized the country of Peru. I then had a memory of someone telling me of their experience going to Machu Pichu when were on break at work. So there's at least two levels of space there: one at my work and the other in Peru. The chains of associated spaces involved with memories can be vast, but I imagine most are singular to the initial space.

There could also be a way to say that one could remember a large amount of memories in one space. An easy way to start, for most people, would be to limit the bounds one's RR cycles to their current residence. If someone has been in a house for years, there must be an incredible amount of memories and moments that have passed that can be associated with the physical material throughout the location. One could then try to go through every space of their house with each cycle with a perspective

similar to their normal point-of-view to recognize many materials and experience tangential episodic memories (TEMs) with almost every material in the location.

But it really depends on the amount of time that is spent in a space. For example, let's imagine someone has an intense layover flight in a city or town they've never heard, where they only have 15 minutes or so to get from one gate to another. If they were to think back and try to recognize that space, there would be little to think about other than that singular period of time and location. In fact, the space itself would likely be a blur in hindsight, but the stress and intensity of trying to make that layover connection would be there. So that comes with the weird question, does the emotion count as material and if not, what is it? I think it is material, and it's weird because it's almost has a mirror neuron effect. Where when that person was participating in that period of time at the airport, the material and connections in their head fired a certain way to make the person experience the stress and intensity associated with that event. An example of mirror neurons is if we were to watch someone drinking a glass of water, then we would have circuitry in our brains that would fire as if we were performing the action of drinking a glass of water. The same can happen when one witnesses another experiencing emotional events. So it could be possible that as the person witnesses this TEM in the present, then similar neuronal circuits associated with intensity and stress could fire in their mind when mirroring their past self's experience. Because this neuronal circuitry can be reduced to material through ion voltage potentials and levels of neurotransmitters, I would judge that emotions are therefore material or at least part material. It's weird because it definitely seems like an emergent phenomenon from a

multitude of different biological parts that can then be classified as an emotional experience, but it depends on the material and space when you get down to it.

So how do you deal with these episodic memories when they pop up during any part of a cycle? There are likely many different ways to deal with them. I think of these episodic memories as flashes that are their own representations of material associated with the space you're focusing on. I try to recognize them as material and move on with the recognizing of the space which sparked the TEM, if time or breathing capacity allows, then I release that memory along with the space and move on past the boundary I set in that cycle. I would not try to recognize any part of the space or chain of associated spaces involved with the episodic memory. Because when practicing spatial meditation, the goal should always try to remain in the present moment of space as you know it and how you relate to it.

When thinking of the spatial information of the model, it is the same for both the TEM and the space being recognized. The slope of information for the cycle is still continuous (when referring to the first equation described earlier in the chapter), but each memory takes up some amount of information space during that cycle. Where there is a limit for any given present time period where one is practicing spatial meditation. Regardless, you want to keep TEMs short to limit exterior information being added into the cycle material modeling unless your explicit goal is to gather TEMs during spatial meditation.

TEMs can be understood quicker than it takes to verbalize and say them out loud in word form. It is that gap in time for processing that we are trying to avoid. Any kind of verbalizing is a hindrance during spatial meditation because it is a distraction from

spatial thinking in general, where verbal thinking is primarily a symbolic derivative of spatial thinking. The TEM is an associate material of the space we are recognizing and should try to leave it at that.

This is at least what I try to do, but I would encourage people to try and play around with different methods and find what works for them. I could easily imagine someone getting lost in the multitude of spaces when following tangential memory after tangential memory, and I've yet to try and explore that territory (could be anxiety inducing). What I have explored though will be listed in the next chapter.

CHAPTER 3: Variations

If you've reached this far then you likely have an understanding of spatial meditation's core principles, but now we'll look into the variations I have experimented with or have at least pondered about so far. This mostly includes ways to add or subtract external stimuli to help enhance the experience. Though first we'll look at the different ways to move about one's mental model in general.

EXPANSION, REDUCTION, AND ISOLATION

The majority of this work so far has focused on the act of expansion when iterating through Recognition-Release (RR) cycles. To recap and perhaps formalize this concept here's a quick run through: we start the cycles with our body being an origin point and begin to recognize an immediate volume of space around us, we then release the model we recognized, and as the new cycle begins we start the recognition of further space at the ending boundary of our last cycle. Each cycle is like this until we either choose to stop or can go no further. To go no further in space means to reach the limit of the knowledge we have observed so far at that level of perspective. Now this boundary could be recognized as an isolated set of physical material being modeled. This isolation is another aspect of spatial modeling that can be explored where we limit the boundaries to an environment (whether we are inside or out) or the bounds could be an object (animate or inanimate). Also, with the boundaries set we could use expansive or reductive techniques to recognize a bounded set.

REDUCTION

Reductive meditation is a weird version of spatial meditation because it's the opposite of what we actually experience in the world. Thinking about physical material being at levels of perception that is often only observed by specialists. To perform this type of

meditation, one often needs some in-depth information on the set of material with which an origin or center of gravity is observed and understood.

At the time of this writing, I've tried reduction a far less number of times compared to expansion because it is less intuitive. When I tried, and later came to understand, I was provided great benefit by reading about neural anatomy before beginning to write this book. I progressed through my body by at first realizing my physical bounds. Then I started focusing on the bounds of my feet and started the cycles by making them disappear from the model of myself. I moved through my body in sections. There were TEMS associated with each of them, all having a mix of emotional experience because I have become so emotionally attached to the material I was analyzing. I finally got more specific and started focusing on my neurological system. I mostly focused on the spinal cord and midbrain, my cortex and the prefrontal cortex. Most importantly, the hippocampus with its place, grid, and time cells. These cells, although still being studied, represent the canvas upon which we understand the world. Understanding the collection of space and time is where this study of meditation all stems from. So that's more or less the path to reduction on the self. But I believe that it can be used on other isolated objects and to deeper levels of recognition, perhaps to the Higgs boson if educated enough or the Plank's constant upon which material is assumed to be quantized in energy (by implications of "quantum" theory). Now let's talk about boundaries and how to limit ourselves to perceive an external set of bounds on an isolated set of space.

ISOLATION

The set of space I'll use as an example will be my cat, Spaghetti. He's been my cat for about half a decade now and I've gotten to know a couple of his quirks like with any good human-pet relationship. I decided to try reducing the cat in several expansionary steps to see what I knew and to maybe understand more about him. At the time, we were in a pretty usual position of me lounging on the couch and him doing the same but on my chest. I closed my eyes and imagined the boundaries he exhibits, then started focusing on parts of his body. Like his claws with which he sometimes scratches me, his belly which he lets me rub, his tail and the way it swipes during intense contemplation, his back and how he wants me to scratch it with every greeting, and his nose and the weird way he likes when the bridge is pet with more force than one would initially guess. Then I was able to picture all of spaghetti, where there would be random flashes of specific parts of his body and the associated memories with each cycle. With this kind of meditation, I imagine one would be able to have these constant random flashes and memories perhaps until we drain all of the knowledge we can think of for a set of space.

It's a more holistic and depth minded meditation on an individual, whether animate or inanimate, and think about it on an abstract, and perhaps esoteric, infinite reductive basis. But in reality, it should be finite, like all of our lives, but I think it's the lives behind us in time that are the infinite, they exist within us and allow us to view the world from so many different levels of perspective. For example, so many people collectively invented the language of math or English or Mandarin. There's a large mindset of past people that are associated with these specific subjects. I guess in a way

it could be finite if we destroy the universe and time cannot continue on in some way, but I truly believe that the universe is indivisible or, at the very least, conservative. So that makes me think that time will forever exist, and we will try to make good etches of ourselves in time. Much like the first cave drawings. We are pattern creating and searching creatures.

PIECEWISE AND ROTATIONAL

There are likely numerous ways to gather spatial information during a meditation, but I'll just talk about the two main categories that I've used in recent experience: piecewise and rotational. Piecewise has been used for all descriptions of spatial mediation experience so far, and could perhaps be labeled the foundational form for all of spatial mediation. The method can be described as randomly venturing from one set of randomly selected bounds of space to another. It's an almost intuitive and exploratory practice where we more or less follow the path of least resistance with a random set of steps when cycling through the models of space we understand, because we often seek out that which we understand the most concretely and the connections in between said spaces. This concept of the amount of information we hold for spaces and the connective paths we hold between them can be related a bit to work on Active Inference by Parr, Pezzulo, and Friston, where they describe the idea of making plans before or while we are physically acting upon the world. To roughly paraphrase, we often plan our

actions in the world based on information which we know will change the least (exhibiting low entropy levels). We follow these paths of low entropy when walking or driving to a local store to pick up food we've had from there before, and we go there because we are able to spatially recognize the path between the two locations being an exploitable and known option. Spaces possess higher entropy levels when there are more options of what can happen within them. And as we get to know more about sets of spaces and different information, our tendency for those subjects start to have lower entropy because we form stronger expectations of how those spaces interact with our model of the world. To conclude, as we attempt to recognize and model the world through RR cycles in a piecewise fashion, we naturally gravitate to spaces we perceive having lower entropy levels.

Rotational spatial meditation could be classified as an assisted method because it is using the known structure of a closed circle for each iteration of a cycle. When I perform this method, I usually include a gentle neck roll of 360 degrees around where one rotation is either a breath in or out. The idea is to perform a 360 degree sweep in reference to one's present location and the direction one faces in respect to the cardinal directions (North, South, East, West). With this information in mind, one can close their eyes and perform the sweep with a gentle neck roll, where one can recognize or release space during a cycle. Then increase the radius from one's self with each cycle. The circle is more of a reference point though, with each space that is recognizing not having to be at specific radius, but within a rough estimate of overlapping range with each progressive cycle.

There is a larger chance of collecting a more refined spatial model with sweeping method of meditation. More spaces can be overlooked with piecewise because the paths of least resistance allow us to progress in a natural expansion, but with rotational there is a large sweeping effect that allows for less spaces overlooked and a pattern of recognition that is easy to comprehend and create a rhythm. Now let's talk about other types of rhythm that can be advantageous when meditating.

RHYTHM

Metronomes are great for maintaining the rhythm and pace of a spatial meditation session. It can help you keep RR cycles evenly distributed and serve as a guide. Wim Hof breathing is like this, but it's pace is a little more brisk than what I'd prefer. I would start with a 60 beats per minute (BPM) metronome where I'd begin each half of the cycle at the end of every fourth or eighth beat. It's slow enough to do a high level recognition of any space but comfortable enough to not overexert your body's ability to breathe.

I started out using a metronome where I had a recording of my fingers snapping and it would play on a loop. I did this because I was curious if the sound of a snap would act anything like an impulse input to my psyche. Inspired by work in signal processing, where if you want to characterize the reverberations of an audio recording

space, then you can record a snap, clap, or ballon popping (an impulse), and then analyze the frequency and pressure wave data to help determine how you're microphone is recording and how the environment is reacting. The recorded audio that characterizes this space is known as the impulse function, and I'm still curious if there is a way to create an impulse function for one's individual experience. Or at the very least, find a way to make one through several different kinds of impulses or tests. I think Freud was onto something with inkblots, but there should be an update in my opinion.

Lately, I have not been using metronomes for my own meditations. Mostly because I've tried it, I liked it, but am moving on with experimentations involving cycles with musical notes where the metronome is implied. In chapter two I described using a cycle using music notes to help keep me in time with each cycle. Here I will describe in more details exactly how this musical structure was built. I created the cycle from GarageBand on my iPhone where I set the metronome to 60 BPM and 20 bars in a 6/8 time signature. I was able to divide it into 5 sections of RR cycles by playing through the individual notes of a C-Major-7 arpeggio which is C, E, G, B, and C at an octave above the previous. Where each cycle consists of 4 bars (3 seconds for each bar) where the first two bars have a single sustained note and the last two bars are silence. I then progressed up the arpeggio for each cycle until it ended with the last cycle at the octave.

These kind of cyclic musical structures could be deliberately made with variations of simple to complex music theory and various segmentations of time. I would imagine that it's analogous to choreographed dance numbers or exercise workouts that relate to the beat structure of a pre-made song. Pre-made songs could likely be used for spatial

meditation as well, but I have yet to explore that other than what I've made for myself so far.

SENSORY DEPRIVATION

To make meditation easier, it's sometimes desired to cut out the various inputs from one's present environment so one can more easily focus on their mental abilities. I've tried a couple of these methods and will describe how they help facilitate a positive meditative experience.

WHITE NOISE

White noise or any comfortable sounding noise like brown or pink noise is a good place to start. It helps audibly isolate one from the outside environment like dogs or cats trying to enter your room or any kind of vehicular noises outside. There's really not much to say about this method since it's relatively easy to gain access to this kind of audio and it's often used for helping people fall asleep. I would warn against high volumes for sustained times though, but that falls in the category for most audio regardless.

SAUNA

The sauna itself was like a constant delivery of heat to my body. Like a weighted blanket that touched every part of my skin. It was a dulling of my external feelings so I could focus on my internal work. Since I don't have a sauna at home and strangers often pop in and out of them at my gym, I usually focus on 5 to 10 minute reductive RR cycles on my own body.

FLOAT TANK

Having commercial access to a float tank is a great asset when practicing spatial meditation. It is one of the greatest ways to provide near-complete sensory deprivation and allowing one to focus solely on the mind. Ear plugs are often given to help water from going into to ears but it also decreases sound. The tanks (at least what I've experienced at The Flo in Buffalo, NY) are pitch black which suspend any information from the outside world to come into your perception, allowing information to come solely from the imagination. The suspension of your body in the water is such a great experience as well, where there is an equal force of pressure from the water to that from the gravitational pull of the earth. We are then held in a kind of full body equilibrium. It's such a great way to help physically let go from one's surroundings and I would highly recommend it after becoming more comfortable with the practice of spatial meditation.

CONCLUSION

If you were to ask me why I wrote all of these words about spatial meditation, I think I would say that it's a nice experience to think of my relations with the world around me and how I interact and remember it. Going through RR cycles help awaken memories that may have helped shaped who I am today or bring up memories I would never have thought of without using spatial meditation. The fact that I can think of these memories and build these mental models based solely on my relation to all that is my present experience and to a set of physical material that is outside of my being is exciting for me to think about and I cannot help but write this. Anyways, thanks for reading and I hope the best for all that comes between you, the world, and the world you know.

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