Engineering Schizophrenia

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Robert Escriva

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Printed in the United States of America.

ISBN XXX-X-XXXXXXX-X-X (paperback)

Independently Published by Robert Escriva,
San Francisco, California, USA
http://rescrv.net/

Thirty two bits converge in a mask
but it's the emptiness
that makes an interrupt work
disks are composed of blocks
but it's the hollow
that makes a disk work
modules and libraries are carved for an OS
but it's the encapsulation
that makes an OS work
existence makes a thing useful
but non-existence makes it work
~ Lao T2u

Part: Three Planets and a Prophecy

Fuck Off

"Fuck off!" I screamed for the one thousandth time.

If you think about it, that's a violent set of words to scream in a hospital. Especially from the psychiatric ward.

It wasn't, like, casual New Yorker, "Oh, fuck off," it was "FUCK OFF!" Possibly with more than one exclamation point.

Survival mode.

My repeated exclamations in between bouts of passing out were all the staff needed to tag me as a hostile patient. I woke up in a straight jacket; then, buckled to the bed.

This is where the story becomes hard to share; I was deep in psychosis. I could *tell you* what I was believing, but without embellishment and polish the story would be a sequence of disconnected, illogical statements that only make sense to a version of me that no longer exists.

Again, I was deep in psychosis.

It's like if Mitch Hedberg were to recite the Silmarion or The Dark Tower series. The story is there, but it'd be a series of non-sequituirs that take way too much effort to assemble to something approximating a coherent whole.

The thing about psychosis is it's much like a dumb AI chat bot that's spiraling. It's just neurons firing to bring causality to temporally-linked events. This and that got wired in the brain, and so they fire together. I once heard a doctor say, "Neurons that wire together fire together."

I'm not that kind of doctor; instead, I'm in a unique position: I can articulate my experience well, and I've lived through some tough psychiatric conditions. What I detail in this book is a story that sounds like it's told by a kindergartener with an Ivy League

vocabulary; psychosis is like that.

I'll be up front, when I started writing this book, I thought artificial intelligence was going to help me write about psychosis. I even wrote a book about a software suite to edit manuscripts and then built said software suite; the end result is a tireless editor with no personality.

And, as is characteristic of life, once I had what I needed I no longer needed what I had. I've kept what follows rough because it's a human story. I've cut the parts I had artificial intelligence polish because they just didn't sound like me and I learned the other bitter lesson: No publisher will come within ten feet of a manuscript that's artificially intelligent.

What follows is my raw, uncut experience of psychosis, healing, finding purpose, and generally figuring out identity when everything is stripped away.

Metropolis

As he wakes up from his morning slumber, our protagonist sees dreamy wisps of Metropolis and thinks it's Tokyo. Our protagonist is known for seeing things in his sleep and otherwise.

As for Metropolis, it's a sprawling afterlife city. As far as cities go, it's part San Francisco, part Tokyo, part Los Angeles. It's huge like Tokyo, height-restricted like San Francisco, and sprawling with suburbs like Los Angeles. Our protagonist has never seen Tokyo, but for some reason he's fixated on it when he should recognize Metropolis.

Metropolis is an advanced, post-capitalist utopia. That's not to say capitalism doesn't exist, but it's been corralled to be just part of the point and not the entire point. To facilitate a high standard of living, everyone is granted a universal basic income, deposited daily. The income is sufficient for an apartment, utilities, and food; Because of this, no one *has* to work, but they can *choose* to work. This inversion from Earth (where work is necessary for survival) enables former Earth residents to savor the afterlife at a standard of living better than 99% of Earth's population; it's even good by American standards.

The net gains from this elective commerce fund the city's growth in support of its residents. Every dense apartment building has has plumbing, electricity an other luxuries of modern life. Through an appropriately levied income tax—on the order of Sweden, not the United States in volume; they aren't that different—the city maintains the quality of life for all residents. Structures get rebuilt regularly to ensure that all luxuries accrue to all residents. This constant renewal is made possible because the afterlife is a simulation. The ease of rebuilding and relocating populations allows

for a continuous renewal of the city's infrastructure, mirroring the cycles of life in the physical world.

Up to this point, Metropolis sounds like a universal improvement upon Earth, but for the current residents of Earth there will be a rude awakening upon ascension to Metropolis. There is no Internet. There is no Facebook. There is no Twitter. The nature of the afterlife is that most people's quality of life improved dramatically in recent times—first with indoor plumbing and then with electricity because they come from an era before these technologies existed on Earth. The Internet would cause an explosion in growth of the economy, and potentially foster community.

The civic leaders of Metropolis have been hesitant to install the Internet because they do not know how to bring the Internet to the people without creating endemic problems of misinformation, addiction, and inequality.

There's also a more equitable question of how to bring the Internet to everyone at once so as to not create a power differential in the population that society would never recover from; social stratification that encodes a hierarchy of who got the latest technology first.

The Internet is the single biggest request from new residents of Metropolis. Given that most people spend on the order of hours in Hell, most of these new residents are newly deceased and thus accustomed to having the Internet. In response, the central planning commission chose to prioritize its installation in all new and renewed structures.

Why is the Internet coupled to rebuilding the city? Fiber installation. Fiber needs to be run to every home before any home has Internet access, and it's not in the budget to retrofit structures in the current city. Utopia does not mean "infinite money". With centralized planning, laying the fiber is easy and paid for by the tax payers. During the 2100-2200 renewal—a sweeping, all-encompassing iteration of the normal rebuild cycle—the city plans to install 10 Gbps fiber to every home to ensure fair and equitable access to information for all residents.

Mechanical Planet

March 1988 marks the birth of Earth's first generation entirely destined for Mechanical Planet.

By no coincidence, our protagonist was born in March 1988 and is destined for Mechanical Planet.

The mechanicals are the namesake residents of Mechanical Planet, another afterlife; a bigger afterlife. The thing to know about Metropolis is that its growth is cause for concern. Like all exponential expansions, it will hit a limit.

Metropolis cannot grow further.

Which poses a problem, because Metropolis was built to contain human energy.

While the human body is mortal, the energy and life force that animates it is immortal, persisting past death on Earth and into what we think of as The Afterlife. Before Metropolis, these energies would drift the universe aimlessly, interacting like all good energies do. Our protagonist's guardian angel explained it to him once. He immediately set his mind to imagining the Fourier transform. Two waveforms, convolving together in multidimensional space to create a new wave form. It's nothing like that, and it frustrates his Guardian Angel that he won't look past convoluted thoughts of convolution to see the true mathematical beauty. He's kinda stupid like that.

The people who built Metropolis—Yoshus—have their peaceful way of life jeopardized by a minority of souls who pass on. It boils down to being a good neighbor: Human energy can reach the Yoshu planet; therefore, we are neighbors. Some people cannot help but insert themselves in their neighbor's business, in ways that are intrusive and controlling. And when you can just "float" the

universe the worst among us become entitled.

The Yoshu founded Metropolis as a safe haven for humans, and to provide a safeguard for their own peace and prosperity.

In human terms, they created Metropolis to give humans a creative outlet for ... humanity.

But now they face a significant problem. Specifically, Metropolis's operational framework relies on all-to-all communication between the benevolent beings—they call themselves Angels—who operate it day to day. They have to engage in all-to-all communication with each other to keep the city on track.

The Yoshu, being a pragmatic race, opted for a solution that mirrored real-world technological advancements. They devised a plan to simply construct a larger system, gradually transition new residents to the afterlife into it until the original infrastructure became negligible, and then deprecate the old system. The Yoshu have fallen into the trap of the typical software engineer. This approach, successful in managing national debts and large scale systems deployments alike, offered a practical way to scale the benefits of Metropolis.

The solution was Mechanical Planet.

Mechanical Planet is another simulation of an afterlife for humans, but with several key simplifications from Metropolis: For starters, its residents—the mechanicals—resemble what we'd call skeletons and the planet itself is one of lights and shadows. Unlike Metropolis, where disconnection from the body is fatal and permanent, the binding between energy and mechanical is loose and fault tolerant. Misbehaving mechanicals sometimes get disassembled as punishment, forced to listen to the victims of their misdeeds until such a time that society deems their debt repaid. Misbehaving mechanicals also sometimes disassemble other mechanicals without consent. It can be a crazy place.

Sanctioned chaos allows Mechanical Planet to expand to planetary scale, far surpassing the confines of a single city as is the limit with Metropolis.

Our protagonist imagines that Mechanical Planet is a large,

crater-ridden, normal-gravity moon inhabited by its namesake residents. He's been assured it's not, but to describe their planet to him in greater detail than I've shared with you would be a form of collaboration between the afterlife and Earth that is prohibited by the afterlife's rules.

There's no Internet on the Mechanical Planet and there will never be Internet on the Mechanical Planet. However, rumors circulate among its inhabitants about a legendary figure destined to arrive. This individual is said to possess the power to grant Mechanical Planet's residents access to Metropolis, effectively ushering in the era of the Internet for all by moving the people to the Internet.

Yoshus' Planet

The Yoshu are a race of peaceful telepathic beings who live for millions of years—two attributes that really shape society for the better. What our protagonist has intuited about the Yoshu is that they have a very particular form of telepathy where a person speaking can be heard by anyone choosing to listen. If Alice says something to Bob, Charlie can hear her voice provided he's thinking of her, even when he is half a world away.

With unfiltered access to each other's private conversations, it is impossible for the Yoshu to conduct business behind closed doors. Consequently, their culture revolves around transparent conduct. Rapid development. Deals done and undone in minutes or seconds rather than hours. Startup culture taken to the extreme.

Imagine it: You meet someone on the street who offers you a business deal worth millions. On Earth it's a scam. With the Yoshu telepathy you can immediately pay a journalist for due diligence based upon work already done. You could come to trust your business partner, because any deal worth millions would have enough scrutiny from the public that foul play would be discovered nearly immediately.

That's how it works for Yoshus anyway.

Since all conversations are immediately, publicly broadcast via telepathy, privacy is reserved only the most intimate of relationships. This forces people to behave genuinely, harmoniously, and compassionately, because any other mode of operation would be unsustainable in their society.

Our protagonist regularly ponders the implications of living with such a connectedness to society. He's seen glimpses of how awful humans would be to each other and how wonderful Yoshus

are to each other. For example, most people would use telepathy to gain an advantage over others; everyone's on equal footing here, so out of concern for the long term health of society, people just don't do that.

One might assume this transparency would erode personal boundaries and autonomy, as if a fish could lose out on walking on land by swimming too hard. One might think about gossip, rumors, or social dynamics—again, projections of non-Yoshu concerns. The Yoshu have evolved their society to accommodate these concerns in ways that defy human imagination.

One thing about the Yoshu society is that it's progressive and always improving, thanks to the benefit of continual leadership passed down via tradition and the ability to socialize lessons quickly via telepathy.

There's one other consequence of Yoshu society that might not be immediately obvious: their art is boring and rarely collaborative—always expressing what a single Yoshu can do in solitude. Because any private group creative effort is immediately public, there's no room for a team of communicators to build something together and bring it to the world. Instead, change only ever comes in the form of a single sentence added to the shared consciousness of the Yoshu people.

The Yoshu desire animated videos, video games, and creative pursuits that would enable their society to celebrate art as humans do. It is currently impossible to rehearse even a simple play without unintentionally divulging the plot through telepathy.

A Prophecy

Our protagonist is on a collision course to solve problems for Yoshu and human alike in a positive-sum way. A prophecy on a collision course to change his life.

This prophecy, like many others, is both intriguing and deliberately obscure. It foretells the emergence of a unique mechanical among the first of their kind, who is destined to figure out how to scale the Angels' communications network so that every mechanical may spend their days in Metropolis. Effectively, the prophecy says that Mechanicals can get into Metropolis. The specifics are never specified in a situation like this. According to our protagonist's Guardian Angel, they usually get parallel-reconstructed into the narrative.

Our protagonist's original understanding was that he was to build a storage system that stored about 128 - 175 bytes per "bone" dictating its location as a vector and orientation in space, along with metadata. This would allow the Mechanicals to "check into Metropolis" and leave their bodies in recoverable positions, ensuring efficient and swift returns home because the bones would be easy to locate. Currently, visiting Metropolis is a multi-year effort for almost anyone except a VIP because it takes so long to find the returning person's bones; it's not yet permitted for that reason.

The key limitation rests with the Angels. They insist on acting like Yoshus, broadcasting and synchronizing every causally significant event. This approach simply doesn't scale when involving exponentially growing populations.

They're managers, not distributed systems engineers.

Our protagonist is a distributed systems engineer.

So when his Guardian Angel laid the problem out, he simply

said, "It's on my GitHub." The capstone of his thesis is a masterless geo-distributed database capable of performing transactional updates in one and a half round trips no matter the origin data center. And adapting the algorithm used to commit updates to maintain the causality lattice the Angels maintain was a trivial addition. His thesis was a key-value store, but you can imagine a lattices-as-databases paradigm rather than a key-value-pairs-as-databases paradigm. That was a paper of his as well.

This shift allows the Angels to transition from processing updates sequentially, globally, to managing numerous concurrent operations. The concurrency afforded in the key-value store allows a small team of Angels to accept updates to the causality graph in a way that leads to stable communication traffic. Because the database enables concurrency, it allows any Angel to submit an update at any time; the protocol maintains causality.

Consequently, once our protagonist passes on, he will go to Mechanical Planet. But Metropolis is within reach of the Mechanicals. The newly-scalable Angel network will be capable of integrating everyone destined for the Mechanical Planet, and the Yoshu will even be able to bring everyone from Mechanical Planet into Metropolis. Current residents of Mechanical Planet have requested their own city to preserve the unique culture that the Mechanical Planet has cultivated—something like the Yoshus' culture.

There will be a train connecting the two cities, and laid alongside the track more fiber than can reasonably be expected. When our protagonist talked to God about it, he asked for a fiber bundle with the equivalent cross-sectional area as the Golden Gate Bridge cables and explained that the more fiber, the more bisection bandwidth available. He has no clue if such fiber is sufficient, necessary, or possible, but full bisection bandwidth is almost always best and he doesn't want to engineer around bandwidth limitations between the cities.

God took it as a personal challenge to enable such bandwidth.

Yoshu Prophecies

Our protagonist is at the center of a multi-way-prophecy of sorts. To the Yoshu, he's going to be a special guest for 120 years. For the mechanicals, he is the one that will bring them entry to Metropolis. For Metropolis, he will oversee the entire Internet architecture.

He doesn't quite believe this to be true. The prophecies themselves. His role in them. The grandiosity of it all. None of it is believable.

Fourth Wall Break

I understand that it's common to have religious delusions when you have schizophrenia. It's common to believe yourself to be Jesus or Buddha or any number of other things.

For me, in the moment where I'm screaming at the psychiatric resident to, "Fuck off," I believe they've kidnapped me. I saw the rules of the world I knew dissolve before me and a new set of rules emerge that cannot be put into a coherent sentence. Literal madness.

To say that I believed they kidnapped me was an understatement: I kept waking up to different "scenarios" as laid out by the voices narrating my experience; the people—doctors, nurses, and even the police—were background. I was in a full on conversation with a set of people only I could contact and no one and nothing on the outside could break me out of it.

I saw hidden undercurrents of society and instantly *knew*[*] what they meant and thought I had it all figured out. I would visualize scenarios (hallucinations really) and immediately believed I knew their significance.

As has happened to me before—I wrote about it in Olivia the Angel—I believed I was in contact with the people who I knew from real life or from positions of celebrity.

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[*] Note to the reader: I didn't know

Work, Play

One might think that because it's the afterlife, one gets to lounge around all day, doing nothing except that which one chooses to do. Nothing could be further from the truth.

Society, on Earth as in Metropolis, is interconnected, interdependent, and emergent. This necessitates a duality between work and play. It's the afterlife, so we'll assume that people should not be working all the time, but let's imagine what would happen if people played all the time. Things like attending concerts, going out to eat, or even just enjoying a hike through the gorges. All of these activities require upkeep. A concert that has 873,965 people—the exact population of San Francisco as of the last census—is likely to encounter every typical emergency that a city the size of San Francisco would endure in a single night. Taylor Swift's biggest concert hit 80,000 people; imagine the infrastructure and number of workers necessary to sustain such a concert.

Our protagonist believes everyone should work in the afterlife because it means that everyone gets to work hard, play hard, and spend their basic income. This plays well with the schedule of Metropolis because Metropolis's days are 40 hours long—something that's surprisingly divisible: Every cycle is divided into a 24-hour "day" and a 16-hour "night". One might think this has to do with the sun, but it's really a division of work: During the day, everyone puts in time for society; during the night, everyone puts in time for themselves. A fraction of people work at night in exchange for time off during the day. There is a holiday dedicated to these people. The wait staff chose valentine's day and everyone else fell in line.

The day is divided into three equal parts of eight hours apiece; society's portion is 24 hours during which businesses must remain

open. The twenty-four hours is evenly divided into three contiguous eight-hour shifts that businesses must adhere to. This rigid assumption brings one benefit: Everyone has one shift for society, one shift for activities of daily living, and one shift for self-improvement. During the shift for the activities of daily living, it's possible to do all of one's banking, shopping, and general errands because the three-shift system ensures that you will be off work concurrent with someone else's shift for society at your desired destination. By making a choice to be intentionally restrictive about how businesses are allowed to operate, Metropolis brings freedom and equality to all. The guiding principle at play is to impose regulation that benefits the overwhelming, non-simple majority of the population.

The night is the individual's to do with as they please. Our protagonist plans to sleep for eight hours and practice photography, write books, and learn guitar in the other eight hours.

People are disappointed to arrive in Metropolis and find you have to work to earn your keep. Society would fall apart if people stopped doing their individual parts. Residents who complain are offered the opportunity to strike out on their own. Thousands have tried and no one from the age of electricity has succeeded in lasting more than a few weeks.

When you strike out on your own, the Angels offer you a loin cloth and optional top, walk you to the middle of nowhere—nowhere's just a place, but the middle of nowhere is a precise place—and leave you there. The middle of nowhere has food and water and shelter, but it's much like living in the jungle. The Angels call this, "bootstrapping" because it teaches people—mostly Americans—that it's not actually possible to be independent from society and pull one up by one's bootstraps.

Society is inherently interconnected and our protagonist wishes to accelerate and leverage this fact to improve Metropolis.

Part: A Vision of the Internet

Standard Issue

Everyone gets a phone and a tablet; every household a laptop.

That's the standard issue for every resident of Metropolis under the current plan.

The phones are simple bricks approximately the size of an iPhone 13 Mini. They have a touch-capacitive screen that covers one whole side, and multiple hardware buttons on the side for volume control and controlling music. The tablet is modeled after the iPad, so much so that the average citizen of Metropolis would be hard-pressed to tell the difference.

The laptop resembles a Thinkpad—one of the best laptops ever built—and has a CPU/GPU combination with unified memory access; so it is the keyboard and form factor of a Thinkpad with the internals of Apple's top-of-the-line offering—another of the best laptops ever built.

The phone and tablet are made for entertainment purposes; the laptop is intended to be a workhorse for working professionals, creatives, and anyone who spends a considerable amount of time typing.

Giving everyone a phone and tablet, but not necessarily a laptop is a cost-saving measure. Metropolis's residents decided not everyone needs a computer, because not everyone will type for a living, but everyone needs to be integrated into the Internet.

Also part of standard issue: Ubiquitous, single-provider WiFi. A giant public service, administered by the Yoshu and run by former site reliability engineers and software engineers who just couldn't walk away from their craft, even in death. It's a sought-after role because so many qualified and unqualified people love working with computers.

Bootstrapping

Bootstrapping the Internet onto Metropolis is no small feat. And in exchange for full bisection bandwidth between data centers, God's asked the Yoshu to deliver within a year once the fiber is available. Time is of the essence; we need to figure things out, cut scope, and design what we need. While the dollar budget is there, we're under a time crunch.

Bootstrapping the Internet onto Metropolis presents a significant challenge due to the absence of fundamental infrastructure. There are no existing computers, compilers, or platforms like GitHub, necessitating the creation of these foundational elements from scratch.

Our protagonist plans to cheat!

That's right; our hero has a plan that skirts the rules, leveraging existing resources and connections to get around the lack of traditional tools.

The Angels currently simulate television and radio for everyone of Metropolis due to demand from residents, but people don't trust the Angels in much the same way that they vote against their interests. Angels do lots of heavy-lifting, care-taking, and organization-watching for society, and yet people still don't trust them. But enough people trust the Angels, and those people have vision.

The Internet will be launched on day one and then again on year one of our protagonist's ascent into Metropolis from Mechanical Planet. On day one, the Angels will simulate GitSwitch.org and a few streaming media applications to give people the ability to watch the Internet develop. Each day, the Internet Network Authority (.cs) or ina.cs for short is going to publish a video to AngelWire

outlining the state of the Internet for all of Metropolis's residents to consume. Every ina.cs engineer works in public on GitSwitch.org so that the public can scrutinize their work and provide feedback in real time. Much like GitHub, except at Layer 2.

The ina.cs marketing team is eagerly devising strategies for the launch.

Our protagonist is fascinated by the process of transformation that the Internet will undergo from day one to year one. From a simulated Internet on day one to a full Internet one year later, run by the residents of Metropolis for the residents of Metropolis. The Yoshu have agreed with our protagonist to maintain the data centers. Yoshus are exceedingly careful and have a zero-accident track record in industrial settings. Humans will run the software operations. Angels will be left out of the genuine Internet's function in order to facilitate trust in an aged system; they will be left to maintain the credit score and banking apparatus in an even and equitable way.

Which brings us back to our bootstrapping problem: How does one build a new Internet from scratch, knowing everything about the *current* Internet of Earth, but lacking so much as an assembler?

Angels and planning.

The Angels can tap into the same simulation powering Metropolis and *simulate* a computer, even an entire network. They're going to simulate everything our protagonist outlines for day one, then it's a year-long race to make it real before the Angels cut off support.

This book was supposed to be the plan.

Why write a prophecy when you can write a plan?

Email

To our protagonist's mind, the Internet is about communication—the free and open exchange of ideas. We begin with email, because people have been exchanging written word for as long as we've had the ability to mark up movable objects with something approximating hand-writing.

With a working email system, the entire rest of the system gets built faster because people can be more productive than would be possible if working in-person were mandatory.

So we start with communication via email.

On Earth, email is federated and dominated by a few key players. Gmail's got the market share, and they frequently send our protagonist's Proton mail to spam. In the afterlife, this isn't a problem because ina.cs presents as a single, centralized authority that can host a single, centralized email service.

We can imagine global communication to be like public roads and bridges: free to use, open to all, and maintained by a collective effort. The Yoshu could oversee an end-to-end-authenticated email service that would function as such a global commons. Spam would be a thing of Earth.

In his dreams, that's how it is, because it's effectively the monopolyish situation we have today mashed up with the benefits of a public benefit corporation like PBS.

Email addresses are simply usernames followed by '@' and the domain name. Perhaps addresses are ASCII only to avoid Unicode collisions between characters that look similar.

The afterlife's email system prioritizes clarity and security. It uses plain text only, eliminating the risk of executable code or visually deceptive elements. Unsubscribe points-of-contact are promi-

nently displayed, ensuring transparency and user control. Every email is sent by a human, an automated inbox response, or an ina.cs-approved and appropriately labeled automated process. This approach fosters a trustworthy and user-friendly communication environment.

The stored email is plain text and resembles this:

```
From: sender@example.com
To: recipient@example.org
Subject: Email Subject

Hi Recipient,

This message serves as a simple demonstration of the format.

Best,
Sender
```

Of course, there can be other headers embedded in the email. The key is that it remains easy to read and write.

And plain text, so anyone can use their preferred text editor to compose emails.

Everything, Everywhere

The Internet of Metropolis and Mechanical City aims for a seamless, unified experience with a single provider. All your data is accessible from any tablet or computer. Visit a friend? Log into their computer as if it were yours—your files and applications are instantly available. The same applies to tablets. Once you log out, everything disappears.

This has been the promise of the Internet going back to its early days. Given the federated nature of the Internet on Earth, and the realities of geographic latency, this is something that has never "just worked" no matter how close we get. Our protagonist is slated to be the Chief Architect of ina.cs and has this universally accessible computation as a standard to be met for all ina.cs applications. It'll be easier in a closed system with sub-25ms latency across the entire network.

What does this mean in practice? ‘/home/you@example.org/‘ is your home directory in single, hierarchical, namespace. All your files live under this hierarchy and are instantly synchronized to every other computer. It's not like classic Dropbox because the file system is in on the system. It's closer to a network file system (NFS) mount that's built for reliability from first principles.

Every user's home directory is tied to their email address. The tilde character (‘ ‘) is expanded by the shell to the user's home directory. Access to other users' home directories, such as ‘ protagonist@example.org/‘, is restricted, unlike some current systems. Instead, sharing is facilitated through three primary methods: publishing a web page, sending files via email, or collaborating on a project.

Web pages are straightforward. Each user's personal website

derives from their email address. For example, alice@example.org would have a web page at //example.org/ alice/. Plain markdown documents and images in the checkout of her homepage become real web pages rendered for the reader. To ensure accessibility and uniformity, the style sheet for rendering a web page is a client-provided property.

The second method of sharing is via email. Features of the filesystem enable files of any size to be instantly transferred. An attached credential in an email can be redeemed to create a link to the file within the filesystem, as long as it hasn't been deleted, so file transfer is instantaneous, even for petabyte-scale data sets.

The final method of sharing is to create a project. Drawing inspiration from platforms like GitHub, a project is a singly-rooted, versioned, collaborative way to do *something*. For example, all source code from ina.cs is centralized and accessible to everyone, but this same mechanism can be extended to other project types.

0, 1, N

When programming you should have zero, one, or arbitrarily many cases for the vast majority of code. The ina.cs programming model takes this to heart and ensures that all programming paradigms be either single threaded or massively parallel. There is no middle ground, because of the nature of computation in Metropolis.

Because all code must undergo code review by a qualified professional who puts their professional reputation on the line to certify the code, great effort has been expended to build safe, almost-programming abstractions for the average user that won't collapse the system. For example, rather than giving people arbitrary code execution, they are given domain-specific languages—and shell is a domain-specific language—with which to work. Data science, in particular, does this exceedingly well, allowing people to work with tensors and linear algebra instead of having to hand-write code. On Earth it's called PyTorch.

To facilitate safe code execution without painful review, the shell enforces simple rules that yield a flexible, powerful, unable-to-collapse-ina.cs programming model. Every shell execution is allowed unlimited amounts of I/O at the rate that a music player can stream to a single core worth of CPU. Need to go through more than a few minutes worth of I/O? Either wait or go through code review. Because of the nature of the programming languages available without review, it is impossible for one user to impact more than a fraction of the remote resources of ina.cs without a serious cascading set of bugs.

Those who endure code review are rewarded with N cores and all the I/O they need because a special ina.cs team is tasked with code review and execution. Taking inspiration from powerful computers

of the past, the data center is physically partitioned in such a way that any one partition has much more resources within the partition than across partitions. This is done logically by restricting the flow of traffic rather than by physically constraining the network. The result is isolation where no one client can saturate the shared pieces of the system. Thanks to full-bisection-bandwidth, the logical partitions can fluidly adapt the data center's partitioning to the cumulative workload.

Artificial Intelligence

Our protagonist believes data is a human right: People have the right to access public data and the right to not be party to *someone else's* unscrupulous data. He arrived at this conclusion after studying the Buddhist Eight-Fold Path and concluding that Right Livelihood means behaving with others' data in a way compatible with the five precepts. At its most basic level, this means all of us should have access to the innovations and economic prosperity derived from data about us.

Therefore everyone has a right to access data.

This has ramifications for artificial intelligence where a select few companies have slurped up 100% of public Internet in search of data and are now generating their own data to train the artificial intelligence.

Shouldn't we all benefit from the distillation of something we all contributed to building? Society's biggest innovations aren't built in a vacuum.

The core problem with artificial intelligence in Metropolis—and why there are currently protests against it—is that it feels like magic to a good portion of the population from the Internet age; to those without the requisite experience, computers themselves feel like magic, and being able to simply *talk* to it is, well, it's something else.

For that reason, many people of Metropolis are looking for ways to make AI safe for all.

Photography

Photography is important to our protagonist. He has a mirror-less camera and a collection of professional-grade lenses and takes on the streets of San Francisco on the regular. He wishes deeply to collaborate with others on photography, but it's a solo hobby for most people, so it remains a solo hobby for our protagonist. Which is a shame, because he has an eye for people.

Our protagonist plans to make digital photography services a first-class offering from ina.cs. It starts with the camera: ina.cs will produce a single full-frame mirror-less camera on-par with the Sony Alpha line. It will have an external SD card slot or equivalent. When done with a shoot, or anytime thereafter, the photographer puts the camera card into their computer and an automatic upload script takes care of ingesting the files according to all rules configured at import. Our protagonist plans to have all his photos upload immediately and automatically apply white-balance and exposure correction because he's a composition over exposure kind of person.

As part of the upload process, all photos are sent to an RPC endpoint run by the Angels who tag each photo as either "child-OK" or "adult". Adult photos cannot, by the rules of Metropolis, be pornographic, but what that exactly means is murky; the Angels will know it when they see it. Nudity is fine, but must be tagged as adult. Violence and simulated violence are permitted when it would lead away from violence.

Once tagged by the Angels, photos proceed to the upload center where the photographer can set ownership settings and import the photos—ideally the subjects of the photos can be present for the import in a collaborative fashion. That's an important part of our protagonist's plan: He wants to have joint authorship of

photos encoded as joint ownership on the filesystem because he read one particular celebrity's account of posing for Playboy before the Internet, not knowing how accessible the photos would become. The ina.cs filesystem—the only filesystem of Metropolis—ensures it by default. Maybe one person can delete a file for everyone, or K of N can choose to combine their forces and delete the file. The filesystem enforces the ownership settings established on import. Models that engage in trade-for-pics with photographers can truly encode shared rights so that either party may delete the file and ensure that it is erased from the Internet.

This has profound implications for enabling safe artistic expression because of this ownership model.

Part: A Contract with Heaven

Engineering Schizophrenia

A little more about me. I'm a computer scientist by training in that I hold a PhD from Cornell University. I am also atypical in that I live with a form of schizophrenia called schizoaffective disorder.

I say, "live with", because, it's not that I *am* schizophrenic; that would be too much. It's not that I *have* schizophrenia; otherwise, I could drop it. It's not that I *suffer* from schizophrenia; I don't anymore.

That's become the point of this book.

This book was supposed to be something else. It was supposed to be the blueprint for the infrastructure to power *something*. When those visions started, I was still a Ph.D. student in grad school. I didn't know what I needed to build, but knew I needed to build the infrastructure to enable me to build something some day. I thought I'd convince people to rewrite the Internet to be simpler.

The mission I set out to achieve was simple, too: 85 services run by a single on call engineer.

This, of course, is a classic reference to Google's 85-service environment that became famous among engineers. The number 85 sticks with me, but it's otherwise not my story to tell. What I took away from it was that it must have been organized chaos. I have a knack for living in chaos, so I assumed that it would be not-too-grandiose to run 85 services with one person—me. I knew I would need to build and scale what I was going to build.

When my delusions started I worked for Dropbox. I was on the coredata team, the metadata team, and then the database team. We maintained systems collectively at a scale that still blows my mind. I became delusional and told people I was going to write a book. I called it, "Five Nines By Design", never mind the fact that I had

never actually *done that* myself, I felt prepared to write about it.

I guess that's where the 85 services starts to come in—you hear legends and stories when you work with other people and they imprint on you a desire to feel you could have *done that*, too. The delta between thought and action is sometimes an impossible chasm to cross.

I wanted to write software to teach the world something; no one was listening. This was before ChatGPT, so we all yelled at each other on the Internet the old fashioned way. And even then, it took orders of magnitude more effort to refute bullshit than to create it.

This book was supposed to be all the ideas that I've put into my passion project. I envisioned simply telling people what I did and why I did it would make for a compelling story. It turns out, as I wrote in Gatherbrained, that I have no skills for story telling. One person, to my knowledge, has even read the code; unless I stumble upon some cabal-worthy secret or story, no one will care to read a story about what is essentially my work and my hobbies.

This was a painful lesson for me.

A self-realization, really.

As of the editing of this sentence, forty-five people have liked the project that inspired this book on GitHub. It's too much to digest all at once; further, digesting the small pieces requires a framework—a shared story. The only way I know to introduce this project is piece-by-piece, and that, when compiled to book form, looks a lot like something no one's going to be interested in reading.

I wanted to have impact on the world. Along the way, something changed in me and I learned another bitter lesson: No matter how good your idea, the world doesn't stand still. Too many other people have published in this space since I started on this project for me to have the impact I wanted—to gain the attention I thought the project deserved. And where they're wrong, I would have to get the world to backtrack before accepting my ideas.

It's the age of artificial intelligence. Distributed systems are interesting to people only so far as they enable people to build with AI. People won't care about my opinion on Raft vs. Paxos and why

I think Paxos is the superior protocol. What they will care about is what people like me design and build for the problems of tomorrow.

So why this book?

Proof that I have something everyone has, but no one talks about.

Proof that relief from symptoms is possible.

And the documentation to get there.

Why follow a prophecy when you can follow a plan?

The Contract

The three planets and a prophecy were explained to me over the course of an afternoon one day in 2022 while deep in meditation. You see, when you have schizophrenia, it's possible to carry on full conversations with someone other than yourself while in meditation.

It's also impossible to hide oneself. Thought. Commentary. Thought. Commentary. Thoughtmentary.

It was a synergistic cycle of me reality testing each thought and visualizing the next one. Except there was an external voice driving the discussion forward. It's an exhausting cycle having a voice that you can hear and converse with, and who knows your every thought before you can act on it. At least, that's what I believed at the start of this journey. What I've learned is that not every thought is visible to the voices that I hear, and I can use the same refugee thinking space as refuge from my debilitating symptoms.

Back to the story at hand: The first time I experienced lucid, coherent conversation after my diagnosis was in 2022. I talked with Master Yoshu—one of the leaders of the Yoshu—about the story of the mechanicals. I instantly saw skeletons, and he didn't bother to elaborate. I don't remember the conversation, but I remember the experience: it was distinctly *different* from my internal voices, as if an external presence were with me. I couldn't talk to him without deeply focusing and listening intently, and even then he was faint.

He explained to me that the spirits chose me because I had learned to talk to them. From this, I interpreted that he was a spirit—a silly observation; he's a Yoshu. He explained that because of this I would be king in Heaven—I call it Metropolis, but the name by which most know it is Heaven—and that being king comes with

a burden to solve the problem the mechanicals face.

During this time, he explained the Mechanical situation enough that I intuited I needed to build a storage system for seven replicas of a petabyte of data. Twenty-five billion people—the projected integral of Earth's population over time who would become Mechanicals—were to be admitted to Heaven. 192 bytes per bone. 206 bones apiece on average. No real compression available. Negligible overhead to index the Mechanicals.

I was to deliver this on Earth; only months and years later would the visions of mechanical planet and how the mechanicals live crystallize in a way that would clarify that we were literally storing 192 bytes per bone for every bone of every person to be able to position them in space, precisely.

I was not prepared for this.

A literal vector store.

Up until that point, my voices had been mostly fleeting, mostly about topics at hand, and mostly falsifiable.

Master Yoshu laid out an entire new design of a key-value store. I did my thesis on key-value stores. This one would be the last one Earth would need to build.

His directive: Use techniques I already knew, and combine it with new techniques that he laid out to me in visions that doctors would call hallucination.

I'm not going to share the revelations here, partly because they're secret, but mostly because they don't matter to understand why they were important: The revelations gave me purpose and drive that ended up with me accidentally overcoming my disorder. Not a cure, but an understanding.

I firmly believe Metropolis is real. I aligned my output on Earth to match what I will need to output for Metropolis. This makes the work feel mythical, achievable, and everlasting.

It gave me drive to get something done in spite of my symptoms. And computers are very good at making a programmer reality test, assuming everyone follows best practices. This gave me a vessel for learning to be productive in spite of hearing voices, having

delusions, and just outputting crazy ideas and/or implementations.

But it also gave me something else: The ability to find who I truly am. I am not the disorder. It comes and goes. I am not the voices in my head. I am not the one who is delusional.

Who is it that is aware of these things if not me?

The SRE Approach to Madness

In grad school, I kept life together with alarms, cron jobs, and scripts; essentially, duct tape.

At my first job I learned what Site Reliability Engineering, or SRE is. It's the practice of systematically adding reliability to systems through common practices relating to observability and monitoring.

I've also heard of it as, "Living in a house made of shit and sticks that's slowly falling into the ocean as you race to replace the shit with sticks."

For a computer system this is the four golden signals: The throughput, the latency, the error rate, and the saturation. Throughput being how many things happen per second. Latency being how long each thing takes the system to process. Error rate being the number of things that break. And saturation being the degree to which the system can handle more things.

SREs take these signals—and more—and use them to construct dashboards and alerts that allow the on-call team to get notified when there is a problem. From there they be able to see and diagnose the problem without touching the system.

It's proactive discovery of problems to remediate them before they become true events.

There's an entire field devoted to working with signals in this way. The core principle of SRE is to recognize that humans run the systems, and humans will make catastrophic mistakes.

Once you accept this premise, it no longer is a matter of "Getting the code right," but a matter of always adhering to safe process.

I won't rehash the field of SRE here. I cannot do it justice because there are entire books on the subject.

Schizophrenic Reliability Engineering

There are daily metrics that indicate a patient's overall well-being.

This includes medication compliance, sleep hours, social interactions, reality testing abilities, and activities of daily living. All of this is quantifiable in a way that renders well on a dashboard. Which means it can be used for signal to construct a means of monitoring a patient.

Concretely, capturing each metric enables us to alert *someone* that the patient is not doing well. And for each metric, we can quantify the degree to which they are not doing well through empirical, patient-specific tuning. The metric that I've empirically validated is to track every daily, weekly, monthly, or otherwise periodic task. Being periodic we know they must have a time at which they must next occur, and potentially a time at which they last occurred. We will extract from this one signal: The total delinquency across all tasks.

Never-once-completed tasks have never completed. Not even once. For such tasks, consider them to have been last completed when they were created. For each task, then, we can determine how delinquent it is by looking at when it was next expected to occur. If it is in the past, compute how far into the past. This is how delinquent it is. Otherwise, the delinquency for a task is zero.

The total delinquency across all tasks is the signal to alert on.

This particular signal is effective as it can be used to capture medication compliance, sleep, socializing, and activities of daily living. I was once tracking this metric and fell off the wagon 10 days before my first major psychotic episode. Seven days prior to the lead up the metric did a characteristic hockey-stick movement upwards. It has done so several times since as well, confirming that

the metric works for a sample size of one.

Consider why this metric might generalize: It captures delinquency in self-reporting of daily tasks. If there's any delinquency in reporting, it gets captured by an automated system. If delinquency is reported, it gets captured by automated system.

So who catches said alert?

The patient cannot, for if the alert is going off to say they need intervention, they cannot be trusted to intervene on their own behalf. There is only one thing that I know of that's self-bootstrapping and it's an internal awareness of the conscious experience. That and Marbury v. Madison wherein we see an instance of self-instantiating case-law*.

So when the patient's cognition fails, who catches it? A caretaker. It's an open-ended question. It can be family. It can be a good friend. It could even be a co-worker or caring individual at work.

With the caretaker chosen to carry a pager we need to somehow connect them to the patient. Our signal should be collected from a tool that is constructed to be safe by construction. In short, if the tool doesn't make progress, that's a signal too.

Once caretakers are in place, we look to what to do when they get paged. In the moment, it's triage, and probably getting the individual to the hospital. But after, that's where the SRE kicks in with a post-mortem analysis: A formal review of what triggered an episode, where the dashboards show early warning signs, and how the system can be improved to harden against failure in the future. Except, it's the human mind, so we also will have space for compassion and understanding.

* Marbury v. Madison, 5 U.S. (1 Cranch) 137 (1803)

Testing Delusions

There's a certain power that comes from testing one's thoughts and finding that, with time, they transition on the spectrum from delusional to rational. A windy, treacherous path.

It starts that afternoon on the bean bag deep in meditation with Master Yoshu. He outlined to me the requirements as if he were purchasing a bespoke suit from a master tailor. Every question had a pre-specified answer.

And that's part of the problem with psychosis. Every question has an answer and the illness makes it very easy to say, "This followed that, therefore this caused that," leading to a chain of illogical and dangerous conclusions. My personal experience with psychosis is that it can feed off anything and the brain can generate a months-long story that makes no logical sense to the outside world, but in which each step *seemed* logical at the time..

There is one question without an answer, however: Say to yourself, "Who am I?" Eventually you won't have an answer and while that may sound like a terrifying prospect, I assure you the more terrifying prospect is to *always* have an answer.

To me, in that moment, psychosis was not so much "crazy talk", but a truly inspiring source of ideas. I specified with Master Yoshu a complete data center platform below which we'd build bespoke hardware and above which they'd ship bespoke applications. It took an afternoon to lay out the plan. It made sense.

The thing with psychosis is that everything makes sense. It's the "Yes, and," of neurons firing. No idea too stupid. Just run with it.

Except there was something special about that day: Every idea I've built from that day has stood the test of time except one, and

that one still remains to be proven. Instead of treating the events like a delusion and having to fight them, I chose to work through them—choosing to believe that somehow I was shown something. By treating it as real, working through it as a real problem, I was admittedly taking a gamble. I could totally succumb to my delusions and get stuck in the worlds of the Yoshu and the Mechanicals. It would be easy.

What I found instead was opportunity.

What I lacked was the ability to execute on the project with sufficient speed to make it matter.

When Logic Breaks

Psychosis has a way of making you a disbeliever in science. Not in a, "I'm too out of my mind to understand this right now," but in a, "I'll believe anything that sounds." Not "sounds right," just, "sounds." When you're a person of science and you undergo such an experience it's hard to come out the other side as the same person.

Logic can only take you so far. Even in math, logic and propositions require something else. There is always an assumption. An axiom. A dogma.

And yet if you've built your life on logic and reason it's the only thing you have. You begin to tear things down to assumptions that cannot break. There has to be some center to which everything else attaches, around which everything else revolves.

Except there is no center to be found.

Psychosis is a seemingly endless pit from which one might never emerge, and without an orientation to the center, there is no way out.

No center? Need a center?

Construct a center.

For me, that center was to find a faith. What I found is irrelevant to anyone reading this. What matters is that it gave me an axiom. Anything I cannot rationally explain I can have faith is handled by the universe and by those who cultivated and led the spiritual traditions to which I subscribe. From the afterlife? Maybe, but certainly part of my conscious experience too.

Instead of trying to rationalize everything, I found a way to accept things that just don't make sense. There's discomfort in not knowing everything, but there's also a freedom. A freedom to continue in spite of there being no rational basis to do so. A

freedom to question everything. To find assumptions that others take as axioms.

To me, faith is not a belief system but an operational necessity. Faith is the axiom, the assumption that allows a psychotic mind to engineer its way out.

How would you handle such a break?

Active Faith

To portray faith as an axiom or assumption is to say it plays too little a part.

Faith is an engineering oracle in the computer science sense of the term; a black-box that provides answers to questions that the system is incapable of comprehending soundly. It's a little like psychosis.

I'm not trying to sell anyone on a particular religion or spiritual practice. What I am saying is that even the most logically, rationally minded among us need ZF possibly with an axiom of choice.

Every one of us needs a strategy to deal with the incomputable.

Every one of us needs a strategy to hold a zero and a one at the same time without giving indeterminate answers.

Every one of us needs to be able to face something that contradicts our worldview without triggering an emotional reaction.

Such strategic acceptance of the unknown allows us to directly confront questions such as, "What happens when I die?" Or, "Why are there elves magically appearing in the textured flock of my micro-fiber my blanket?" Both equally plausible questions for a patient prone to hallucinating. Having an articulable strategy for confronting the unknown is essential to dealing with psychosis. If you have to reality test everything to the smallest detail as is required when programming, you will quickly exhaust your mental resources.

Instead, being able to hold two contradictory thoughts in mind—and it is just in mind—and go about one's day is a powerful, *freeing* feeling. Being able to see, "This conflicts with that. That conflicts with this. We have two conflicting thoughts that are both handled by the Universe," is usually sufficient.

Faith is the way to answer a question whose only answer is unknown.

Experiencing Death

I was in direct communication with a mechanical who shall not be named; she ended up driving me into a psychotic episode with lasting consequences to my life: I locked myself out of my apartment, barefoot, without identification or cellphone and ultimately fell on my face and broke my jaw.

The mechanical in question was narrating to me in between blacking out in a series of hospital rooms, ambulance transfers, emergency rooms, and operating tables, and yet more hospital rooms.

The story doesn't make sense to me even though I can recall all details and ramble at length about it.

What I take away from it was an overwhelming sense of what it would be like to face death, die, and come out the other side a new person. It all came to a head when I got out of the hospital, walked into my bank, and asked about my new trust fund.

The banker was gracious and and turned to my dad and made sure I was being taken care of.

Up to that moment I genuinely believed I was owed a trust fund that was going to magic its way into my life.

In that moment, the delusions met reality. Somehow I got out of the hospital still in full psychosis, believing I was destined for a trust fund on Earth.

That pain is the same pain that I feel with true close calls with death. I used to ride a motorcycle until one day a truck tried to run me off the road. I won't put the details to writing lest I horrify my mother, but suffice it to say it was the last day I rode the bike.

The hormonal reaction is the same. I don't know the hormones by name, but can separate the feeling of, say, ordinary stress or

adrenaline, from a close call survival-instinct. Time dilates. If you go rigid you die. If you let the eyes wander, the brain pulls the right detail and the body does the right thing. If you've experienced this kind of survival you know. If you haven't, you won't be able to comprehend just how real life can feel.

That was the last day I rode motorcycle.

In that moment at the bank, I died. I metaphorically could not continue with the world view I held.

So I gave it up and adopted another view, more in-line with reality.

The Energy of Purpose

Motivation was hard to come by.

Hard is underselling it; impossible.

It was one or two months post-death of my anxious self. I was still very much me, but I started to be able to function again. I was psychotic and not responding well to treatment, but I started being able to do things. Like write code for the project Master Yoshu laid out.

Having a purpose driven by the unknown is the most powerful feeling I've ever felt. Being unknown, it is seemingly inexhaustible. Bringing purpose, I was the bottleneck in the vision.

Believing you're on a cosmic mission to build a multi-petabyte key-value store in order to get the Mechanicals admitted to Metropolis so that all may enjoy Internet is a powerful motivator.

And yet, it's no longer enough.

I need to find purpose on Earth that aligns to the purpose of Metropolis. I can't not think of Metropolis and Mechanical Planet. I can't not think of the key-value store I've been recruited to build. I have to build it.

Therefore I have to build it on Earth, too.

But building a key-value store no one will fund for deployment is about as windmill-tilting as building an ark to hold two of every animal. I have to find the deeper purpose embedded within the key-value store prophecy that can connect me to people in the here and now.

Connection. That's the key.

Accepting my delusions has allowed me to connect with others. I can accept that the voices tell me that other people don't like me without accepting that they do not like me.

There's that word again: I.

Once you feel it, it's an inescapable happiness.

That's "I".

I am the one who gets to cultivate my experience.

I am the one who creates a life that works with my symptoms rather than despite them. Why should I spend all my time fighting myself when I can put the wind at my back and sprint?

What Motivation?

Is it the delusion that's unlimited when using it as fuel for the fire to drive real world productivity? Or is it something deeper. Something human.

Who is it that's asking the question? At one level, I am Robert Escriva. But that's my name, not who I am. At another level, I'm a software engineer. But that's my profession, not who I am. Who is it that's playing this endless game of labeling and rug-pulling?

Even in my darkest moments of psychosis I was still there. I wasn't sure who I was, how to pronounce my own name*, or what was going on. But there was a witness inside who saw it all without so much as a spec of that mess clinging to it. An ever-present witness able to see the delusions for what they are: Thoughts. Not in the traditional sense, but in the sense that, if you were to sit down and be rooted into the ground, nothing about the delusion could hurt you.

This constant witness brings stability to the unstable. It's an unmovable point in shifting sands. As symptoms come and go, awareness remains; universal.

I've had the following revelation many times now—it doesn't seem to stick. Even so, I put it to writing to make it stick: The same spiritual healing that brought me something like enlightenment can *also* be used to bring about relief from every psychiatric symptom I've encountered that doesn't require emergency hospitalization.

Think about that for a second.

In my second book, I put forth that Buddhism was the original psychiatry. So much of the lessons of therapy don't work unless the

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* "Fun" fact, I still cannot pronounce my name consistently.

therapist moves in subtle ways. And you can draw direct parallels between common therapeutic practices and texts like the Tao Te Ching or The Gateless Gate. Once you see the parallel, it's impossible *not* to see therapy as series of Buddhist, Taoist or Zen techniques masquerading as contemporary cures.

This lends a spiritual air to the healing process for me, and was the start of a long journey I'm still too early in to speak openly about where my mind is.

What I can speak to is the ways in which I've grown.

You Are Not Your Symptoms

One simple exercise has changed my life so dramatically I would give up pretty much everything else in life before giving it up.

The exercise that transformed my life is simple: I sit. I stretch my arms, and I flex my legs. I might read. I might put on some TV off-axis and out-of-vision. Stimulation sometimes, no stimulation other times.

But no matter what I sit on a round pad for an hour in the morning before doing anything of consequence and I sit for an hour in the evening after work.

I sit and I just notice what comes up. I don't try to suppress it. I don't try to get to an empty-minded state. Instead, I pay attention to every small detail. Meditation shouldn't be about getting to zero, but about getting to 100%. A place where it is possible to be aware of every aspect of experience—unaffected by any aspect of experience.

To be candid, I firmly believe many traditions that point to emptying one's mind are a red herring.

There's the classic koan about the master who pours tea and let's the cup run over. I forget the punchline, but I don't believe the point was perpetually emptying oneself of thought; More, emptying oneself of thought before taking on other thought.

When you start out meditating, you can't help but have thoughts. It's natural. Trying to get to zero thought is the goal. Isn't it paradoxical to seek fullness in pursuit of emptiness?

Most people will never experience an empty mind, free from thought, where observation and action happen as if by reflex rather than mental expenditure. I experience it daily. Most people will experience some amount of anxiety from thoughts circulating. Therefore, practices which preach getting to no-thought put the practi-

tioner in a bind.

I take a different approach: I seek *every* thought. Not to latch onto, but to experience, to let pass through, and to not react to.

Imagine if someone were to repeatedly tap just below your knee to trigger the patellar reflex, it would eventually stop activating.

Thoughts are similar.

My exercise takes a subversive take on meditation: Instead of retreating into silence, exhaust the mind into submission.

What I've found has been transformative: An awareness beyond mere experience.

Voices arise in awareness, but they're not awareness itself. Confusion arises in awareness, it's not awareness itself. And delusions try to undermine the rationality of awareness, but cannot for awareness is pure and untouchable.

My awareness itself is not schizophrenic. It is simply a witness to a schizophrenic experience. My zero-knowledge proof is that I believe I can remember most of my worst episode—the one culminating in the bank scene—and not one decision I made was *irrational* or *not me*. They were delusional. But if, given the same sensory input, I would take the same action as output, is it irrational?

It's at least deterministic.

That's the thing with my type of delusion: I am acutely aware that unbelievable things are happening to me just as I am aware of how unbelievable they would sound if written down.

Who is it that witnesses the symptoms, set apart from the influence of delusion and hallucination?

The first time I had an answer to this question, I felt an immediate wave of relief wash over me; a feeling of tension gone with the realization that symptoms were never me.

Positive Symptoms

Positive symptoms are what people stereotype schizophrenia to be: Hearing voices, believing delusions, and experiencing hallucinations all contribute to the core of my schizophrenic experience. I find it a slap in the face that these are called "positive", but it's not a value judgement; instead, it's a statement of the way they positively intrude into experience.

Witnessing my symptoms as separate from them, whole, untouched, I was able to recontextualize them as weather, dreams, and projection.

Voices are like the weather: Transient, fleeting, and unable to affect consciousness. Some days they are terrible—telling me I'm going to die in my sleep—and some days they are comforting—telling me stories of how the afterlife will be a better place. There's not much to be done for voices in my experience except to put on music and let the weather pass.

Delusions are like dreams you believe to be real. I opened this book sharing one of mine. It took many months of revision to put to written word and I still don't think I captured just how vivid and expansive this world I'm aware of is. Thanks to continual reality testing, the world unfurled in a way that was compatible with logic and reason; ironically, this makes it harder to falsify delusion.

Harder is underselling it. If every single aspect of your life experience to date is unable to falsify something you believe you experienced, you will *never* be convinced otherwise through words alone until the tangibility of that experience fades away.

Words cannot begin to describe things.

Literally thousands of books have been written on the same subject as this book and each one speaks to a different audience.

Negative Symptoms

Negative symptoms are what I experience most from schizophrenia. Anhedonia, avolition, flat affect, and cognitive symptoms. Ironically, even though most of these are the absence of something positive, they are what I feel the most; almost like a withdrawal from what it was like to feel normal once upon a time.

Anhedonia is the lack of pleasure. For me, the anhedonia makes things I've enjoyed all my life less fun. I put on a favorite album and there's just *nothing*. The magic sparkle is just not there where the music usually evokes singing and dancing in my mind. Not of the hallucinatory sort, but as a metaphor for the pleasure it once brought. It's a double-whammy for schizophrenics, because the medication we commonly have to take can block dopamine in the brain, so we naturally lack pleasure and then we lack the ability to be stimulated into pleasure.

Avolition is the lack of will. A lack of motivation. Sometimes things just won't *go*. As someone who never experienced avolition until graduate school when my disorder started to present itself, it's frustrating to be there, to observe that things just won't move, and to feel powerless to make them move. This is not laziness. It is a deep inability to motivate oneself due to processes in the brain that simply don't function in a typical way. I can see it. I can answer questions about it at length. I cannot overcome it on the worst days.

Flat affect, also known as resting-schizophrenic-face gives me a perpetually frozen face. It shows very little in comparison to what I feel. I can be happy or sad, enthusiastic or avolitionistic and my face presents the same unhappy visage.

Cognitive symptoms abound. I can see disorganized thinking and I can speak the disorganized thinking. And I can clearly describe

what's wrong about my thinking in hindsight. Sometimes even in the moment. The most frustrating thing about cognitive symptoms is they're invisible and they lead to a spiky presentation of skills. I can be a wizard in one area and totally unable to maintain life in another. And yet, I am hyper aware of the deficiency; further, I feel powerless to change it despite being able to characterize it at length.

Who is it who recognizes the absence of the things normally present? The lack of pleasure present as anhedonia? The lack of will as avolition? The lack of clarity as cognitive symptoms? Who is it who can identify that the negative symptoms are so-called because they remove positive aspects of experience?

Who is it that identifies something as missing?

Can it itself go missing?

AI Psychosis

Large language models based upon attention and transformers have a peculiar property: The only thing they know how to do is generate the next token according to a probability distribution. A process that would go on forever if it weren't trained to probably, eventually emit a STOP token that the application running the model uses as a shibboleth to signal termination. Once a token is admitted, it's added to the message and never changed again.

Reasoning models can go on for quite some time.

Under pressure to generate the next token, they generate *some* token, and that token influences the next one. One wrong turn can derail a prompt.

This process is called auto-regression.

Real life psychosis is similar. My brain is wired to present thought after thought after thought. When I reality test, I can connect the thoughts or prove them to be disconnected. But under psychosis, *something* must come next and temporal relationships often encode as causal relationships. In my limited experience with psychosis and watching others in psychosis when hospitalized, psychosis is much like an LLM's auto-regression without a stop token. Each thought turns into the next thought and the whole train of thought derails into an accelerating garbage heap.

Psychosis will twist your mind, because no matter what rational thought you have, the experience will twist and turn to accommodate and neuter the rationality within the thought. There's koan-like wall that erects itself between the psychotic and the world. No amount of words can bring an individual experiencing psychosis out from psychosis unless those words have the same meaning to the psychotic and the practitioner.

Fundamentally, psychosis is a break from reality; I'm not qualified to speak to the nature of all psychosis, but I can say with 100% confidence that my most recent bouts with hospitalization due to a psychotic break didn't fundamentally change the awareness; instead, the psychosis upended every fact that I knew about myself, recast them all in a new story, and then my rational, reality-testing brain made sure that it was entirely internally consistent. Which, if you enter a world filled with witches and finger spirits talking to you by holding onto your finger in another dimension, you will rapidly find yourself saying things that are objectively crazy. The more you reality test, the more consistent the story becomes, and the harder it becomes to get back to reality.

Do you know how hard it is to let go of a consistent internal narrative? It literally feels like you're going to die. I've had close calls with death on a motorcycle. Being trapped between a rock and a hard place and seeing the light of a way out is, well, it's enlightening. It's satori. It's life flashing before your eyes—not because you're going to die, but because you're going to live a fundamentally different life forever after.

Fundamentally different and fundamentally the same.

Put another way, awareness of awareness brings about a fundamental shift in consciousness. To me, this change in consciousness was death. I didn't literally die, but part of me did. A part of me that identified with experience as me. This is not dissociation or detachment. It is awareness of the fact that I am aware.

Why, then, am I writing a book about the subject? Because reaching for this awareness and being able to find it upon command is a powerful therapeutic tool for every schizophrenic symptom I have experienced. Being able to focus on awareness itself, whether in meditation, while walking, or while active gives me an anchor and reference point to something untouchable. Something akin to the power of faith. Being able to be aware of a delusion in the moment and feel empowered to just experience it without judgement takes a lot of power from the delusion. I chose my words to use the passive voice carefully here: I am able to be aware of the delusion.

I experience the delusion. But I am not the delusion itself.

Unlike AI, we have something to be aware of that can direct, dissect, and test our conscious experience to pull us out of psychosis.

Part: Completing the Contract

To Fellow Travelers

If you're reading this and you have schizophrenia: You are not broken. You are not your symptoms. You are the awareness of them. You are not the suffering you experience daily, but the one who says, "I suffer."

It can become easy to get in one's head, or a psychotically delusional story, and create unnecessary suffering. Identifying with symptoms gives them a permanence they don't deserve. Even if symptoms present all day, every day, they are *presenting*. To whom?

Who is it that answered that question?

You don't need to wait for your symptoms to resolve to start finding the answer.

A Call for Contributors

The infrastructure that was once the point has become less pressing because no one wants it.

I don't know anyone who is going to pay me to build it on Earth from scratch in accordance with my vision. Certainly not petabytes out of the gate.

Even so, with renewed purpose, the infrastructure still needs to be built: 85 services, three engineers, one on-call at a time.

In an early chapter I revealed that I didn't know what I was building this project for. My schizophrenic symptoms have clarified what I need in a pie-in-the-sky-but-pragmatic pitch: I want a system of processes that do what I wish my psychiatrist and support network would. A specialized care team that synthesizes data, checks in regularly, and tells me when I'm objectively in need of help. Because one downside to deadly experiences is that the part that can tell when things are bad gets calibrated to *really bad* experiences, and in the process becomes numb to less-pressing problems.

I'm building a support platform for people with schizophrenia, autism, bipolar, and ADHD. It will also support others, but these are my focuses for they are things I have intimate experience with.

If you've read this far, I would love the opportunity to meet you.

Why am I ending the book this way?

Put simply, because I face discrimination: I've often been criticized for an inability to execute at the level of my vision. People dismiss me and don't look into what I do because it's quite simply too far detached from when I said I was going to do it.

By putting out this story and committing to it, I've called my shot in a very public way.

It's unfortunate that our society requires one to go to this level

to be believed as capable of accomplishing something big.

What does that say about the society we're building?