

“We as scientists are aware of the implications if this theory proves correct. It wouldn’t simply expand our worldview, but portray the complete universe in its full glory.”

- Li Yong Yin & Emma South. (2105). *Proposed Interpretation of Kilter Data*.

Chapter 1: 2673

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Logically, Xia Lin had known the Binjing Library would be nothing like the ones she’d studied. The spiralling staircases and mahogany arches reaching up to the ceiling, the leather bounds and intimate light emitted from pear shaped bulbs, she knew those to be romanticised stories. Even worse, those ancient accounts described an information system of unbelievable inefficiency. The simple thought of going through all those pages to find one little piece of information was enough to give her a headache.

But, as she sank her head into her hands, she knew she’d prefer anything – anything – over the hellish blue light emitted by the holoscreen in front of her.

The problem wasn’t just that the brightness made her eyes hurt. She hadn’t yet figured out how to change it, and the glow illuminated her face as well as the walls. It wasn’t even that it was slightly ominous, being alone with the holoscreen as sole source of light. She could deal with the solitude and isolation of sitting in her own cube.

What she could absolutely not handle was the speed of the holoscreen. There was a seemingly endless period of jumbled characters and flickering light before the information finally crystallised. And when, at last, it became readable, she had to go through it. Manually. Without being able to scan it directly to her neural interface. It really was a crime that this information hadn’t been neuraled yet.

A crime in the same way as using her neural interface to hack into stranger’s neurolenses was, she grinned – the world as it was, but not as it should be.

Well, most people probably would think that hacking neurolenses should be illegal. But most people had also done it at least once.

The holoscreen technology dated three centuries back, right around the time the Settlement had started and the texts she was here to read had been banned. It wasn’t that they contained secret information – no, every single person was familiar with its contents. It was just that the Wanderers thought there was *more* to the papers than met the eye.

Xia Lin scoffed lightly and shook her head. Ridiculous. The Complete Portrayal did its name justice. Humanity settling into a prospering and rich society proved it did.

Still. In her society, where Wanderers were a mere memory and history bore such great importance, these papers should be easily accessible. Someone should have neuraled them.

She realised the absurdity of that wish even as she made it. Remembering the outright sceptic looks the Encouragers had given her when she announced her desire to study the history of the Portrayal, she knew neuralling all this would be a waste of time. Even though everyone knew about the Complete Portrayal, it wasn’t exactly a hot topic these days. And with good reason, she thought, glancing at the holoscreen still only showing a mess of characters. Even in the years before the Settlement, when these papers were outlawed, the Portrayal held little to offer humanity anymore. The frantic technological

development following the discovery of the complete set of physical laws had slowed down, and only hobbyists and Wanderers had bothered with the original papers anymore.

Again with the Wanderers, she thought bitterly. These papers were inextricably linked to the group of madmen. Ultimately, they were the reason she was sitting in this dark cube, instead of her favourite sunny spot in the Centre of Encouraged. This information should be sacred, but instead it was hidden away, unneural.

As always, pity and something akin to anger fought for the upper hand as she thought about the Wanderers. Why were they unable to see humanity's success when it was right in front of them? The thought made her furious all over again, but was soon forgotten as she noticed the holoscreen finally having resolved before her. As she started reading the elegant paper containing the two lines of formulas that had changed everything, Xia Lin couldn't understand why people would want to doubt the validity of the Portrayal.

Towards the end of the paper, Xia Lin realised she had to take in this experience before it was over. This was a big moment for her – academically, but also personally. She was reading the original Li and South paper, something she had only dreamt about before. *This* was the topic that had fascinated her enough to go against the wishes of everyone around her.

Although the paper's content was familiar, the words themselves were not. At the beginning of the discussion section, she finally found the sentence that was quoted time and again, and was even engraved on the statue in the middle of Beijing's Central Square. Most likely, it was the only sentence of this paper that had been read by anyone in the past century – up until now, that was. Until her.

For a moment, she lost herself in a daydream, imagining what it must have been like for these scientists to immediately realise the implications of their discovery.

Almost instantly, embarrassment flooded her. It was no good thinking about being a scientist. That, Encouragers had made very clear to her early on. The golden age of natural science had come to an end and brought humanity an idyllic and peaceful life, freed from the chaos and unexpected. She had been encouraged to instead pursue the career of a Healer, or a Builder if she was looking for something a bit more creatively inclined.

In a sole act of rebellion, she had chosen to become a Historian of Science.

Her choice of career didn't exactly help her social standing. Although Historians were held in high regard, studying the history of science was deemed a waste of time. In private, many considered Historians of Science to be only slightly better than ancient Wanderers. Xia Lin's Carers had been disappointed, but even that couldn't put her off.

Looking at the formulas levitating before her eyes, she knew that despite everything, she'd made the right choice.

Fuelled by curiosity, Xia Lin became engrossed by the flood of information, trying to understand life from five hundred years past. She cross-referenced through centuries of time, reading scientific papers, news items, and governmental reports. She was surprised to find that she understood many of the time-specific elements, even those referring to music or art.

She smiled when she came across the acknowledgements of a paper in which the author thanked their favourite musician. The movement hurt her facial muscles, indicating that she'd been in the dark cube for far too long. In the corner, a related video popped up in her recommendations. Curiosity peaked, Xia Lin enlarged it on her holoscreen.

A sudden explosion of screams filled her cube. Xia Lin covered her ears, terrified, but realised the sound came from the video. It showed the scientist's muse, a young woman with a guitar, on a gigantic

stage surrounded by a mass of people. When the musician strung the first notes, the screaming started again as they shouted the words to her song.

Xia Lin was mesmerised. Yes, music still existed, and she listened to it frequently. However, it was a private affair. To her knowledge, no one made new music anymore, and it certainly wasn't shared among big groups of exuberant people.

Apparently, this had been the case five centuries ago.

When she started, she couldn't stop. Everything she saw confronted her with people behind art, music, and theatre. She was bombarded with new ideas, conflicting opinions, and competing notions. There wasn't a single truth – it wasn't even accepted that there existed such a thing.

Gradually, a realisation grew in her mind. Her favourite artist lived four centuries ago. The most recently written song she'd listen to was around three centuries old.

When she was younger, her Carers had read her stories. There was one she had absolutely adored, wanting to hear it over and over again. It was the story of the Kilter mission, the first attempt to build a miniature accelerator in space. She'd loved hearing about the difficulties, the excitement, the wonder. Most of all, she loved the way solutions were found, seemingly out of the blue, through creativity and perseverance.

Humanity had overcome many things since then. Surely, these had also required the same creativity? The same ability to create?

And yet, no matter how much she racked her brain, she came up short. Finally, a simple fact stood out, a terrible realisation dawning.

The only things she'd read from the centuries following the Settlement were news articles.

And although the people excitedly singing on her screen looked almost exactly like her, they felt like an entire different species.

In the blue light of the holoscreen, Xia Lin sat defeated.

Chapter 2: 2674

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It was interesting, Xia Lin thought idly, how well language and science lined up at times.

Throughout the centuries, people had referred to anxiety in many ways, but the most common one had been nervous. Feeling nerves. At first sight, it was a weird expression, especially because physical sensations had always been associated with nerve cells, but emotions had not.

By an amusing twist of fate, the expression actually turned out to be close to the truth of the processes happening in the body. Only a few years after the Portrayal was published, a research group derived a new theory for quantum electrodynamics. It produced some of the first testable consequences of the Portrayal, and helped solidify its position in the scientific community.

The real shock only arrived a few years later, when the new quantelectrodynamic theory turned out to describe thoughts and emotions in physical terms. And yes, anxiety was indeed caused by the physical sensation of *feeling nerves*.

Something she was experiencing first hand in that very moment.

It was truly amazing, how many of these phenomena the Portrayal had been able to describe. The applications of quantelectrodynamics resulted in new treatments for mental illnesses and emotional therapies. They'd improved mental stability, and with it, countless lives.

And yet, the man sitting across from her didn't believe the Portrayal's power.

"Don't get me wrong, I think the Complete Portrayal is amazing," he said, pulling her from her thoughts. "It's just not complete. They should've chosen a different name, heh." He snickered to himself.

At once, the absurdity of the situation struck her.

This was a *Wanderer*.

There were no stories built around them, as there might have been around ancient villains. Wanderers were simply extinct. A weird artefact of the paradigm shift following the Portrayal. All her life, that was all she had needed to know.

And as such, the man across from her proved the inaccuracy of all she'd known about Wanderers. He was everything but extinct, with his wild gestures, wild eyes, and *very* wild hair.

Yet, this man didn't seem to be dangerous. Initially, she had thought he might be, considering that she had contacted him through a deep, shady corner of the Neural Connective Network. Adding to her fear, she'd been terrified that someone had noticed the unusual correspondence. For days, she had walked around in a daze of panic, but the longer none of her Encouragers brought it up, the safer she felt.

She recalled the excitement shining through her terror when she read his reply. "*It's not often that a real scientist wants to talk to me,*" it had read, contempt and distrust dripping from each word. It had taken her weeks of explaining her motives before he stopped only giving sarcastic answers. In time, his username turned into a real one. "*Wallace Kendrick, at your service.*"

And he had finally agreed to meet.

She couldn't decide whether his uncontrolled hand gestures were usual for him, or a sign that she wasn't the only nervous one. Although her fear of Wallace was seemingly unjustified, he definitely was... restless. His eyes shone as he tried to explain his choices to her.

"It just doesn't add up, little girl," he said, full of conviction. "Have you ever heard of the data that was collected by Hubble III? Thought not," he snorted after she shook her head, "it *is* very awkward data, considering it doesn't fit into the Portrayal."

Those words gave her a pause, pulling her attention back into Wallace's chaos.

"Weren't expecting that, were you? Heh, of course you weren't. You've been *encouraged* well."

Startled by his mocking tone, she was pushed into defence. "You're saying that, as if I've never thought my own thoughts. I have chosen History of Science, you know. My Encouragers weren't exactly happy about that."

He raised his eyebrow at her. "You know why they got that name? Wanderers? My predecessors, so to speak."

It was hard to keep up with this man, Xia Lin thought, holding back a sigh. It seemed like his brain worked along twenty lines of thought at the same time.

“Heh, of course you don’t. Well,” he said mockingly, “some fifteen years after the Portrayal, all this *new* and *exciting* technology was used to uncover the truths of the universe. There was an enormous scientific impulse, so suddenly, there was money available for every outlandish experiment.

“Of course, most people had already made up their mind about the universe. Apparently, it takes no more than that for the scientific methods to break down,” Wallace sighed, dragging his hand through his hair.

“Hubble III was one of those spectacular scientific experiments built in this period. It reported back data from past the edges of our solar system. And it’s – well, it’s amazing. There’s so many things in there that just don’t fit the Portrayal at all.”

Wallace fell silent. Xia Lin realised in the back of her mind that this was the first time he had done so, but was distracted by the enormity of what the Wanderer had just revealed. The impossibility of it all.

“I know you want to call me crazy. You can, I don’t mind. I’ve been called worse – we all have,” Wallace shrugged. “When more sceptical scientists expressed their concerns about the Hubble III data, they were taken seriously. Heh, well, at first they were. But as evidence in favour of the Complete Portrayal mounted, they were painted out to be conspiracy theorists.

“And then the term *Wanderers* was born. The general opinion became that they were unable to accept reality, but instead kept looking for other explanations like a bunch of madmen. Heh.”

Carefully, Xia Lin said, “it’s just... are you sure? Is it-”

“Sure?” Wallace barked out. “It’s not just the Hubble III data, little girl. If you know what to look for, all data that has ever been acquired from beyond our own solar system points to one thing: the laws of physics are not invariant throughout the universe. Maybe the Portrayal is correct here, but it isn’t out there!”

Wallace, who had unconsciously raised his voice during his tirade, lowered his hands quickly. Back to his usual demeanour, he started to grin, his manic playfulness returning.

“Of course, the term Wanderer backfired spectacularly. Heh. It’s true, we wander, beyond the edges of the solar system, beyond what is known. I wear the name like a badge of honour. Or at least I would, if people were still acknowledging my existence.”

Resting his case, Wallace leaned back. Xia Lin, however, was not quite ready to give up.

“I don’t mean any disrespect-”

“Unlikely,” Wallace snorted.

“-but in the beginning, many scientists must have looked at this data,” Xia Lin continued, ignoring him. “If there was truly something out there, they can’t just have ignored that.”

Wallace looked at her thoughtfully. “Are you familiar with the concept of bleaching the eyes?”

Xia Lin felt the blood leave her cheeks. “I’m sorry?”

“Heh!” Wallace grinned. “You should see your face. I know I’m unhinged, little girl, but I’m not crazy.”

“I’m sorry,” Xia Lin said, embarrassed. “I didn’t mean-”

“-any disrespect, heh, I know. Anyway, I was talking about photobleaching. When you’ve looked into the sun for too long, you get this weird black blob on your vision, right?”

“You’re really not supposed to look into the sun, you are aware of that, right?” Xia Lin said, imitating his tone.

Throwing her a look, Wallace continued. “The blob is called an afterimage. The same thing happens if you have been in darkness for a while and are suddenly confronted with bright light.”

Xia Lin nodded in response, silently agreeing that the term *Wanderer* suited this man very well. Again, she was lost on where he was going with this.

“I always think that the same happened to humanity five centuries ago. Listen, even though I don’t believe in the completeness of the *Portrayal*, it’s hard to put into words how big a jump it was.

“Suddenly, there were so many possibilities – infinitely many, it seemed. The *Portrayal* had consequences for every field. As a scientist, it’s what you dream of. An explanation. A truth.”

As their gazes crossed, Wallace suddenly looked as old as the history he was describing. Xia Lin was struck by the difficulty, the loneliness of his life. If the *Wanderers* were correct, they were the only defenders of humanity’s search for truth. The only remains of the golden age of scientific progress.

“It must have been glorious,” she said softly.

“I’m sure it was,” Wallace said, uncharacteristically quiet. As if shaken from a trance, he continued in with his usual flourish, “glorious, but absolutely overwhelming. What do you do when you can do everything? And don’t forget, many scientists spent their whole lives assembling tiny pieces of a grand whole, telling themselves that they are setting the stage for that single person who will put the pieces together.”

Xia Lin frowned at the image, so different from the fairy tale she’d come to associate with the science of the 21st century. Thinking about it, she supposed Wallace was right, although–

“I think you’re making it sound far worse than it was. The thrill of the chase, the excitement of finding results... People dedicated their lives to it. They must have had their reasons.”

Taken aback by her suddenly decisive tone, Wallace tilted his head. “Heh. You are right. Maybe you weren’t encouraged as well as I thought you were.”

Xia Lin, feeling strangely proud, was pretty sure that was meant as a compliment.

“Of course, that’s what I’ve been doing my whole life too. In any case, these old scientist were suddenly confronted with an overload of results. Compared to the scraps they had assembled all their life...”

For what felt like the first time that day, Xia Lin felt she understood what he was getting at. “It must have been like being flooded with light after having spent your life in a dark room,” she said. “That’s... a surprisingly coherent analogy.”

“Thanks,” Wallace said drily. “I’ve only been brooding on it half my life.”

After a moment of silence, he again started speaking enthusiastically. “So they didn’t see, or maybe didn’t *want* to see, what was right there! And of course, after a while, there was no money going to fundamental research anymore, but to the Mars colony, and then to the Venus colony, which was also awesome, of course, but–”

Taking in the *Wanderer*, his eyes shining with excitement and dedication, she suddenly realised why he seemed familiar. Even though they looked nothing alike, Xia Lin realised in a flash that she had only seen the likes of Wallace once before. A girl playing the guitar, singing together with a screaming audience.

“–and I would love to discover how physical laws vary throughout the universe, but there’s no new–”

“Show me,” she said, interrupting him with an ferocity surprising even herself. “Show me everything. I want to see what I’ve been missing.”

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When the news broke, chaos followed.

It wasn't surprising, all things considered. Humanity hadn't seen change in over two centuries. It didn't recognize it, didn't know how to deal with it.

Society went through phases. First, there was scepticism. Ironically, Xia Lin thought, this was the closest humanity had gotten to the scientific mindset in centuries. Denial soon followed, as many couldn't - wouldn't - accept the consequences of Wallace's collection of data.

It was what came next that surprised Xia Lin. She thought there would be anger, grief, depression, any irrational feeling that would allow humanity to deal with its loss of omniscience.

Against all her expectations, humanity got to work.

Xia Lin smiled lightly to herself. Sitting on a roof, looking over the groups of chatting people, she realised how good it was humanity could still surprise itself. Apparently, even generations without change could not erase that ability.

It had only taken a single year before there was a visible increase in the number of young people studying the old scientific ways. In large numbers at a time, they started to ignore the advice Encouragers had dished out for over two centuries.

It was like a dam broke. The Inspired, as they called themselves, didn't stop at theory. They worked together with the Wanderers coming out of hiding to construct their own primitive scientific experiments. On all humanoid planets, they assembled in large spaces to learn, to discuss, to inspire.

Xia Lin recalled the day she first joined such an assembly, now six years ago. It took place on Central Square in Binjing, in the open air, and was chaotic and unorganized, but an extraordinarily joyful occasion nonetheless. She couldn't really overcome the awkwardness of her newfound celebrity status, but she had never felt more at home.

The Inspirers had come a long way since then. In the spirit of the ancients days, universities were established, often named after the iconic ones dating centuries back.

It had taken all this to find herself at the top of Cambridge University, more than a decade after the undeniable truth had awed humanity. Or maybe, as Wallace would say, the undeniable absence of truth.

So many things had changed, she thought to herself, many of which she had long accepted as being incapable of ever changing.

She was pulled from her musings by the strumming of a guitar. Her gaze was pulled towards the sound, coming from the square below her.

At the sight that met her eyes, she was filled with the same awe she had felt in that dark library cube, now more than a decade ago. Suddenly, it seemed like nothing had changed at all.

A small group of young Inspired had gathered around a young man playing a song, readily humming along. She wondered where he had found such a guitar - it looked ancient. Musical instruments were still rare, although interest in them was growing. The boy looked awkward with the instrument on his lap, but made up for it with his enthusiasm.

She smiled as the guitarist dramatically strummed the last accord, one of the others laughing, throwing his head back. Imitating the movement, Xia Lin's eyes slid from the group of kids below to the sky above her.

Taking in the vast expanse of stars, the laughter that comes with inspiration in the background, she finally understood.