

Imagine Thunder

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Abstract. The science fiction prototype entitled “Imagine Thunder” defines a future in which the protagonist suffers with major depression disorder and begins his recovery with the aid of virtual and immersive reality. In this immersive reality, the protagonist holds the ability to enter the world of his favourite fictional story in place of one of the characters. Through this, the protagonist faces challenges and comes to valuable self-realizations in which emotion-driven virtual reality aids the steady recovery of those suffering with a variety of mental illnesses. The protagonist shows the benefit of personalised virtual realities in which one can briefly inhabit to overcome obstacles which had previously hindered their individual recoveries.

Keywords: Virtual reality, haptics, eye-tracking, head-tracking, futurecasting, Human-Technology Interaction (HTI), innovation, depression, mental illness.

1 Introduction

The short story entitled *Imagine Thunder* offers a descriptive world view in which both future and past timelines overlap to affect the happiness of an individual central character. With the ever-increasing prevalence of mental illnesses in the world's population and virtual reality (VR) technology being made accessible by commercial brands, a likely sub-link could be made between the two to assist the full or partial recovery of certain mental illnesses. Primary research into the use of VR in the treatment of mental illnesses has been largely concerned with anxiety, schizophrenia, and eating disorders [1]. However, this story describes a boy's struggle with depression and the possible benefits of VR for treating such an illness. The protagonist is an eleven-year-old boy who has been placed in an experimental research facility to treat his major depression, which he has suffered from for the past several years. The story describes a state of depression in which passion has been withdrawn by the patient from all day-to-day activities, except the engagement of the imagination in the form of fictional reader. This is used as a method of escapism. In describing a character who suffers from absolute numbness, the importance of emotive story-telling is underlined.

“Imagine Thunder” is a story inspired by the potential of technology to treat a variety of mental illnesses. Although this story primarily focuses on youths, the imagined technology described could be applied to any age group. The advances made by VR technology in recent years have been exponential, along with the increased use of VR technology commercially. Should these developments focus even partially upon the health sector, the premise of this story may well be recognised. It is not unimaginable that VR technology would be distributed commercially to large-

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scale government-run institutions such as hospitals. The technology itself described within the story functions by manipulating an individual's entire brain and full centre of intuitive thought to re-create one's most positive fantasy. The entire brain is incorporated when using the imagination, with different regions (front and parietal regions) more involved than others [2]. The VR technology described within the story strives to utilise every brain region. A fantasy is deemed most positive by the quantity of dopamine released. The premise of the story is to not only create a palpable reprieve from conditions such as major depression and general anxiety disorder, but to be used at short intervals to aid recovery, where recovery is possible. In "Imagine Thunder" the protagonist, Henry, begins his recovery with the help of the VR technology which raises his dopamine levels sufficiently for him to gain a renewed interest in all activities which he partook in before his depression became too severe.

The story is written with the background knowledge of a writer, rather than a technologist. This can be seen through the character development of Henry and improvement of his mental health overtime due to the capabilities of his imagination. In the beginning, he deems to world to be 'too heavy' for him, due to the weight of his imagination. Yet it is the positive manipulation of his imagination that results in the beginning of his recovery, which is inferred to be replicated by other patients. Rendering to the principals which all science fiction prototypes [3] are built upon, technologists and writers combined hold an ability to look beyond the current restraints of technology. The story serves the purpose of widening the considered techniques of treatment for mental illnesses and encourages the use of 're-emotion', as termed by a medical professional in the story, by use of technology. 'Re-emotion' is described within the story as the re-introduction of emotions which a patient may have previously suppressed, as a tool for recovery. This technique may have great all-round benefits for millions of humans.

2 Imagine Thunder

The long hall with its white tiled ceiling and bespeckled laminate floor stretched out in front of Henry like a plank to be walked until he reached his untimely end. Dr. Justineau walked beside him, though slightly ahead, still leading the way to some mystery location. Henry observed that Dr. Justineau's heels clicked and clacked exactly twenty-eight times until she, and then he and the nurses following them, came to a stop outside the clinic's Community Room. She opened the door and nodded for him to go inside with a cheery smile.

The Community Room was Henry's least favourite room in the clinic. It was where he was destined to find other children like him who were more willing to share their own stories than he was ever likely to be. Once inside, Henry sat in the chair closest to the door. White, once again. Everything in this place was white. Once he took his seat, there was only one seat in the Community Room's sharing circle left unoccupied. This one was black – for Dr. Justineau. He stared at it with great resentment before sighing deeply and focusing his energies upon actively avoiding the gazes of the twelve other children.

Henry had been in *Castle Countess Clinic for Socially Estranged Children* for nearly five weeks. Being only eleven-years-old, he had no say in his mother and father's decision to send him to the experimental clinic for treatment. In truth, he hadn't quite seen the necessity for such a drastic action, but then again, his mother was prone to overreaction. In Henry's mind, his Great Sadness had a blurry starting point. All he knew for certain was that now every minute of his life was marked by an intense weight on his chest that seemed so heavy that his sternum might crack open, allowing the heaviness to crush his heart. The very *air* seemed too dense for Henry and living had become much more difficult than the simple trifle it had once been of school, friendships and growing up. Now, each breath cost him something deep and dark that he couldn't explain to his parents. The one benefit of *Castle Countess* was that Dr. Justineau seemed to not so much understand this feeling, but to at least recognise it. And now he was surrounded by other children of different ages whose chests also weighed so much that they might break too.

Time seemed to move as though in a vacuum for Henry as they waited for Dr. Justineau to enter the room and tell them the purpose of this impromptu meeting. When he finally looked up from his lap, he found a reflection of himself in the other children. There was a distinct deadness in their eyes and a vagueness to their gazes that he had seen in himself. This knowledge flooded him with black misery.

With the distinct squelch of the door unsticking from its frame, Dr. Justineau entered the room. Her dark hair was tied back into a sleek ponytail and her half-moon glasses were perched on the bridge of her nose. When she took her seat in the black chair, her trousers rose to show a silver anklet.

"Hello, everyone," Dr. Justineau said, smiling to everyone in turn. As expected, the children all stared at her balefully. It wasn't that they didn't like Dr. Justineau, but it was hard to have a different answer for the same question that was asked more times a day than Henry could count. "How are you all today?"

No one spoke except for a girl who looked to be fifteen or so. Henry remembered that she was called Ana. He had always liked the look of her, simply because the ends of her hair were dyed pink and she had a topaz gemstone in her nose.

Ana's answer was a derisive snort, which Dr. Justineau dutifully ignored.

"I wanted to speak to you all together, to tell you about something which I think you will find very exciting," She continued. Henry thought that it was a wonder that she was a doctor for depressives at all, considering she still thought something could excite them. "We have been privy to an exciting new experimental treatment option, for your conditions." She paused once more, as if waiting for an influx of enthused questions that was not likely to come. "Using virtual reality."

Virtual reality.

Those two words had once meant something very significant to Henry. He could tell by the leap of recognition he felt behind his navel. As Dr. Justineau explained the experiment, he found himself remembering aspects of interest he once had for technology and though it had been years since he had felt passion for anything other than reading, he remembered the words Dr. Justineau was saying.

Immersive. 4-dimensional. Interactive. Mixed reality. Spectacular. Engagement. The Dome.

Then Dr. Justineau added one last important one. *Recovery*. This project must really be important if she was whipping out the big R.

By the time, Dr. Justineau had finished speaking, Henry had only heard two words that really mattered to him. *Immersive stories*.

Henry had been six-years-old when his mother had given him his first book to read without her help. It was called *Imagine Thunder*. It had been an adventure-filled tale of dark magic, kings, and a very dangerous princess. There had been eight books in total in the series and Henry had practically inhaled each one. They had unearthed something in him, a need for something much greater than anything this life could offer which even his depression had not taken. It was this need for a stimulated imagination which Henry often blamed his depression on. Had he been the type of person who did not *need* the extraneous details in everything, Henry might have been happy. As, unfortunately, when one is searching for details, what you find is not always good. Now he could not erase the details of his parent's relationship, his failing friendships, or his own personal failure from his mind.

Without waiting until Dr. Justineau was done explaining the experiment, Henry found himself raising his hand to take part in the first experiment within what was being called the immersive Dome.

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Henry was one of the only children lucky enough to have his own bedroom at *Castle Countess*. He could not figure out if he was either not sick enough, or too sick, to share a room with some of the other patients who had not only depression but other illnesses. He was perfectly okay with this, as it meant that the side of the mint coloured room that should have housed another bed now held a large, rectangular bookcase, courtesy of his godmother who visited more often than his parents.

His days were filled with an overriding sense of blandness. Like pasta without sauce or the colour magnolia. Except for his stories. Except for the window, they offered him, to leap free and experience kingdoms and fights for something that *mattered*.

That all ended when Henry began the experiment with the Dome. The room with the virtual reality technology was not on the *Castle Countess* grounds, but rather in a lower room of the neighbouring hospital. Henry, Dr. Justineau and a plethora of junior doctors keen to observe, travelled in a van. Outside the weather was overcast with several drops of rain dotting the windscreen, but Henry was grateful for the change of scenery.

The hospital's basement rooms were cluttered with new and old machinery, but were reasonably bright and well-aired. The hallways were littered with lab-coat wearing professionals who smiled and nodded to Dr. Justineau as she and Henry walked towards the room at the end of the hall. As they all filtered inside, Henry paused by the door, overawed by the great expanse of the room. Dr. Justineau stood with him at the door as others set about turning on switches and dials. She watched his expression move from awe to reservation and smiled a little sadly.

"This won't be difficult, Henry. We know from your art therapies how sharp your imagination is. The Dome uses imagination as a means of creating the next steps in the experience," Dr. Justineau touched Henry's shoulder lightly and he looked up to meet her gaze. "The turns the simulation takes depend on you. You will most likely

visit the scenario or fantasy world you most frequently imagine. The Dome functions by measuring your dopamine levels. If they drop below your current baseline, we will pull you out. There is no wrong route, I promise you.”

Despite her reassuring tone, once Henry allowed the small wireless receptor pads to be stuck into the insides of his palms and at his temples, he felt unsure of what kind of fictional world his imagination would conjure up. He had to keep reminding himself that he was doing something new and that was what mattered. So, it was with small beads of sweat escaping his forehead, that Henry entered the dome-shaped hut of interwoven plastic walls and wires that took up much of the free space. It was like wattle-and-daub reimagined into something bionic, something *alive*. For Henry, it positively teemed with possibilities.

Dr. Justineau instructed him to stand in the centre of the Dome through a microphone connected from outside. Once in the middle of the Dome, Henry looked around waiting with uncomfortable flutters in his stomach for something to happen. A man whom Henry had never met before took the microphone from Dr. Justineau. His voice was like gravel, as he explained the sensors on his palms would take a minute to trigger his imaginings as they engaged all aspects of the brain. It was like a controlled hallucination, he said. He was encouraged to imagine his most happy fantasy. Soon, the Dome before him would become like an extension of his own bloodstream, feeding, and thriving off his hormones and emotions to reflect his images back to him. Before long, it would seem to Henry as though he was a member of that imaginary world as his senses of touch, smell, hearing, sight and even taste would be overridden with the influx of images his mind would be flooded with, creating a new reality. The doctors would not be able to see what he did, but would monitor his responses carefully and he would later be asked to describe it to them.

It began with a ripple. The very air in front of Henry seemed to shake and then it all changed in a single blink. When he closed his eyes in the Dome he had felt uncomfortable, surrounded by doctors observing him as though he were a millipede under a microscope. Yet when he opened his eyes, he was no longer the sad boy whose parents worried for him.

Now he found himself placed directly into the world of his favourite book series, *Imagine Thunder*. With every second, the knowledge that this was not reality fell away with the smell of burning wood that filled his nostrils and the gentle swish and sway as he sat astride his steel grey warhorse, Abraxas. He was no longer Henry, instead he was the captain of the Kingsguard. The youngest in a century and valued by all in the southern Kingdom of Windhart.

Where he sat astride Abraxas upon a great grassy hill, Henry recognised as the border between Windhart and the Slumbering Wood. From where he sat on his high vantage point, he saw that the forest was a vast thicket of dark trees and on the other side, according to the myth, was the northern kingdom of Ellesmere, though there had been no contact between the two kingdoms in over a thousand years. The children of the kingdom often spent days squinting into the distance to see if they could spot the turrets of Ellesmere palace, but they never could. All that remained to be seen was a deep and dense fog which no one dared enter for fear of never returning. The most to have exited the forest in some millennia was no more than a rabbit or two.

The day was bright and crisp, as everyday was in Windhart. It had been over one hundred years since they had had a rain shower. In Windhart the earth was

watered through the calm energies of the Empaths. Empaths were great people connected to the earth who spoke to the shrubs and plants alike, encouraging growth and bountiful harvests. Almost everyone in Windhart was an Empath, but not all were as adept as Henry, who never lost control of his emotions.

Henry looked behind him, turning Abraxas slightly, with one hand resting of the hilt of his gilded steel longsword. He was not far from the entrance of the town, perhaps no more than a half mile. The woods that stood behind him could not have been more different than the Slumbering Woods. These woods were sparse and inviting with a cobbled stone path carved out leading to the main throng of Windhart. Somehow, Henry knew that stationed no more than one-hundred yards to his left was another Kingsguard, maintaining the King's peace.

He sat upon Abraxas for a few more minutes, playing with the pommel of his longsword nervously. He could not explain why, but an overwhelming sense of foreboding was beginning to settle upon him like a dense fog, despite the bright and cloudless day. Henry was just considering withdrawing his longsword for peace of mind when he caught sight of something terribly ominous in the distance. He placed a hand over his eyes to shield his view as he watched the edge of the Slumbering Wood. His breath caught in his throat at the sight of the torrential downpour of rain which seemed to be sweeping over the forest with alarming speed. He barely had time to pull away from his post before he heard the King's Horn booming from atop of the palace walls. Surely the castle guards, so much higher than he was in the town, should have seen this coming? There was no way that he could outrun this storm, though some of his fellow Kingsguard seemed to be trying to as they tore back up the hill and into the town. No one alive in Windhart had ever experienced anything but beautiful, calm weather. This storm seemed all kinds of *unnatural*.

Abraxas was beginning to shake nervously and step backwards in the direction of escape. Though for some reason, Henry could not tear his eyes away from the treeline. Hoping he would never have to explain his actions to himself or anyone else, he leapt from Abraxas. He slapped the horse's back and screamed at him to run, though the din of the approaching storm was beginning to drown out all else. The horse's amber eyes questioned him for only a moment before taking off and with a hand on the pommel of his sword, Henry faced the oncoming storm.

The first drop of wetness on his face was not as he imagined. It *hurt*. This rain was hard and frozen into small balls that rained down on him, bouncing from his tunic and onto the grass where they gathered to form a new type of earth. He resisted the urge to cover his ears, and peered out towards the trees. A thrill of mysterious anticipation rushed through him. When the rain did not seem as though it could get any harder or faster, he saw the flurry of colour burst out through two trees.

It was a *girl*. Astride a jet-black horse who was neighing furiously. From the moment he saw her he was sure that she was the centre of this storm. That moment didn't last long, however, as the horse suddenly reared onto his hind-legs and back down with such force that the girl was flung from its back. He ran to her and found that she was conscious, but crying fiercely. When she looked at him as he touched her back ever-so-gently, he saw that she was no older than he was, perhaps even younger, with short blonde hair that was now pressed wetly against her head. Her eyes widened at his touch and he thought he felt an almost imperceptible lightening in the falling hard rain. Then, with wide golden eyes, she reached out and

took his hand and as though he was a potion for calming nerves, the rain slowed into a light drizzle before turning *soft*. Henry gazed at it in shock as the water drops froze in the white flecks. He had heard this fable before. This was what was known as a snow flurry.

“Who are you?” He asked, as her grip on his hand tightened. She was using his Empath abilities to control her emotions, as his power flowed like fire from his hands to hers. She watched their hands with an intensity that caused him to wonder if she had forgotten that he existed as more than a hand. She did not answer, but when she looked up and he saw her strange, golden, and green eyes once more, he knew. He’d heard the fable of those eyes too.

She was the Crown Princess of Ellesmere, the forgotten kingdom.

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It had been almost nine days since Henry had entered the Dome and lived in the world of *Imagine Thunder*. Nine days since Dr. Justineau had withdrawn his senses from his imagination and a consistent sense of awe had settled upon Henry. Now when, he ate dinner with the other patients and went to his traditional talking therapy he did so with a little more awareness for his surroundings than he had done before. Though he surmised that it was less of an awareness and more so actual interest. The improvement, though he was unsure if it was even an improvement, was immeasurably small in comparison to his Great Sadness, but Dr. Justineau and her team of gagging doctors were thrilled when he had rolled his eyes and described this in his weekly session with her. She had explained this as a term known as *re-emotion*, whereby the emotions he had shut out and not felt for so long would be his saviour by encouraging him to engage in activities that would lead to *feeling* once more.

“How did you find the experience?” She had asked. Henry had struggled to find a word to describe it.

“Widening,” He settled on. When Dr. Justineau cocked a single, impeccably groomed eyebrow his eye roll had ensued. “It’s like my eyes are open wider, like my senses are heightened since I was in the story. It’s like I can’t quite shut it out anymore.”

“Shut what out?”

“Everything. You, them,” He gestured a thumb over his shoulder to the door to mean the other children waiting back in the Community Room. “Now, it’s like I can’t fully close my eyes.”

Henry didn’t mention how this wasn’t a bad feeling, it was simply different after so long switched off. He didn’t explain how being an Empath, a Kingsguard Captain, had altered his view of himself somehow. In the Dome, he had touched someone’s life and made it better because of his emotions, and not worse. And that, he concluded to himself, made all the difference.

2 Reflection

The short story “Imagine Thunder” describes a somewhat hopeful consideration into the opportunities which Virtual Reality offers those suffering with mental illnesses. In

doing so, one can see the direct benefit of drafting science fiction prototypes. It is through stories such as these that Human-Technology Interaction (HTI) can be given new possibilities for utilising human emotions to create more positive and emotive experiences. Science fiction prototypes offer an insight into the future of humans and technology from all points of view as either the user, developer, or an observer.

From the point of a view of the writer, the purpose of science fiction prototypes such as *Imagine Thunder* is the draw attention to a desirable outcome which moves beyond the simple motives of entertainment towards improving human health. Heading and eye tracking through sensors are essential, yet Henry's technology goes one step further by monitoring his hormone levels, namely dopamine. Through these tracking techniques and haptics, the protagonist gains the tactile feedback of the emotions he gains and imparts in his imagined world, which appear so realistic that they stay with him for long after each session. In saying this, it is very important that VR is not used exclusively as the only means of recovery from a mental illness and periods of time between using the VR are restricted so that the user has a firm grounding in what is real and what is not.

The strength of emotion within the story is seen through Henry's initial numbness and later heightened awareness of the happenings around him. This simple contrast is done for the purposes of highlighting the role of technology as both an emotive and functional contributor to mental illness recovery. The advantage of the story's science fiction prototyping technique can be seen in the description of awaiting technology which is entirely plausible regarding development. Throughout the story only one primary form of technology is shown as the *Dome*, mirroring the single-track mindset of those suffering with a mental illness that dampens awareness. The story may serve as a conversation stimulator for writers, educators, engineers, technologists, and business people to look to the possible positive outcomes of using VR technology within healthcare.

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