Stories Of Your Life And Others Notes

Tower of Babylon

- The tower of Babylon is many, many miles tall; inconceivably tall
- Hillalum is a miner from a nearby town that has helped mine to provide material for the tower
- Now they've hired him to help them dig through the "vault of heaven" they've reached at the top of the tower
- There is a festival and they hear of others miners from Egypt that will come and help them who can work with things like granite
- They begin their ascent. It is difficult to get used to the height and one of their colleagues taps out.
- Eventually they get used to it and feel as if they are no longer attached to earth.
- Eventually they pass the moon and the sun
- They reach the stars and are told of a story of when a star hit the tower and eventually hardened into black heaven metal
- They eventually make it to the "ceiling"
- They employ fire and smoke to tunnel into the ceiling and carve out a space, along with a catch to block off the entryway in the case of a flood from the heavens. As they build up they build more of these to block off a flood at the highest point the last trap was built
- Eventually they hit water and it floods
- Hillalum fails to escape. Realizing he cannot escape, he runs upwards through where the water is flooding to go higher
- He is eventually swept away. He awakes in an unknown place.
- He walks about and sees a familiar group and they say he is on earth near his old town
- He realizes the structure of the world is cylindrical in a way, that after heaven came earth again.

Thoughts

- Even though our ascent ultimately led us back to where we started, doesn't mean it's meaningless. It was the climb that ultimately gave us the meaning that led back to ourselves.

Understand

- A man is having recurring nightmares that are getting worse as he starts remembering an experience he had blocked out - he had effectively drowned/froze and been out for an hour but was saved with a new drug
- During an exam he's told the nightmares will go away and realizes he has

expert recall of long strings of digits
- He works in holographics
- Eventually the nightmares start to go away and he learns other new abilities like multitasking expertly
- Doctors interested in the drug's effect offer to let him try more as an investigative study. He is interested in becoming even more intelligent and avidly agrees
- He hacks into see the in progress study results and sees it is very effective in increasing intelligence - and the effect is proportional to how much damage there was in the first place
- The intelligence tests they run on him don't capture the true affects - he is almost on a higher level of consciousness
- Eventually a doctor questions how he'd respond in certain scenarios. He realizes part way through that man seemingly has ulterior motives (but we are not explicitly told this). He believes he's a government operative interested in his ability as a strategic asset. He purposely gets questions "wrong" so they don't try and recruit him or take him as a lab rat.
- He goes to withdraw from the study. But is told of bad side effects and that he should come in to be seen. He decides to run, assuming they are trying to capture him now.
- He leaves a letter explaining that he's on to them. Soon after he sees online that the drug has now been pulled. He strives to steal one last batch to get even more intelligent.
- He tracks one down and uses genius abilities to crack integer factorization and break most forms of public key cryptography. He uses this to get one of the drugs that is being returned.
- Upon this happening the FBI has seemingly realized he has hacking capabilities and removes all information related to the drug and the study offline.
- He lays low and makes money gambling and through the stock market. He abilities to manipulate his own body increase. He becomes very adapting at analyzing patterns and ensuing behavior in he can easily see the reasons behind everyone's actions. It's all predictable.
- He eventually hacks and blackmails the CIA director into not pursuing him anymore - which he assumes is the case after a girl he used to date is being accused of aiding and abetting a murder
- He works on developing a kind of universal perfectly expressive language to communicate in ways he cannot fathom that better encapsulate the essence of everything
- He is frustrated because his current tools won't let him go beyond that
- He decides to try another injection of the drug. He does so on himself.
- He elevates again to another level and can seem his mind operating and

rewire it at the same time - a new kind of language that is self-altering and every evolving for his own mind to operate in
- He can now effectively divide his own consciousness into segments working on different tasks in different emotional states - like threads in a computer
- This also gives him superhuman coordination
- He can employ these together to effectively do whatever he wants to others by controlling their ticks to get a reaction he desires
- He hallucinates sometimes. He can only push his mind so far with his limited biological hardware. He seeks to improve.
- He notices a seeming anomaly in a stock pattern that he thinks means there is someone else out there like him sending him a message
- He eventually locates the other person - Reynolds, who has been on the drug longer
- He learns that Reynolds wants to use his ability to “save the world” and the normal people there. He assumes Reynolds will find him hostile because he doesn’t really care about the world - just his own advancement
- They talk and learn much of each other’s ideals, but are clearly too different in their pursuits - one for humanity and one for intellectual beauty/elegance. They begin to fight.
- They use slight body ticks and tricks to fight each other - by triggering them into over boiling their blood or something like that
- He mounts a powerful attack, but Reynolds parries it. Reynolds responds with a more powerful attack he claims he has. That with a single expression/word he could destroy the other’s mind - kind of like a back door hack of a computer or a perfectly tuned skeleton key. At the mention of it he goes into a defensive mode. Using a simulation buffer to probe any input before it could affect himself. Reynolds edge seems to be his focus on others and ensuing ability to manipulate themselves, whereas he has only focused on himself
- Reynolds says he has used it once before to test it.
- He realizes Reynolds doesn’t intend to be a perfect saint, but just a savior for humanity
- Reynolds says “understand”.
- He realizes this is the attack. That it is a memory trigger. That in a way a series of memories have been implanted in him that when triggered in the right way are all strung together to trigger the destruction of his mind. Like a hacker slowly amassing viruses in a targets computer.
- He dies.

Thoughts

- A lot of overlap with the themes of the book Blindsight. The main character is reminiscent of both Sarasti and Siri. Is the main character just becoming a vampire and/or Chinese Room?
- The book kind of describes an arms race in “consciousness”. With each dose of the drug his “consciousness” level went higher and higher.
    - That implies that anyone could be given a consciousness score. His was much greater than the average person. But what is the variation amongst average people that haven’t taken the drug. Does that apply to our world?
    - Also, it paints a fairly grim future for the evolution of “consciousness”. What would have happened if Reynolds lost and he went to the limit/ maximum of consciousness? Does conscious life just lead to a battle to the top until ultimate consciousness is achieved? Then what?
- A lot of this exposes the idea that we are really just biological computers and that as we exceed/enhance our biology the way we function will not be much different than computers and all of the things that apply to computers (buffer overflow attacks, etc) will also apply to humans

Division by Zero

- Division by zero is undefined
- Renee is a mathematician being brought back from psychiatric hospital by Carl, who once when he was a kid was in one
- Renee has OCD-like behavior
- The story is interlaced with references to number theory and geometry+mathematics, mostly related to the concept of division by zero and the consistency of the foundation of mathematics
- Renee was interested in mathematics early and grew up to be one of the best mathematicians
- She won many awards but in her mid thirties she started to get increasingly frustrated at starting to become unable to solve the exceedingly hard problems that were left for her to solve
- The story explains how Godel’s Incompleteness Theorem shows arithmetic as a system is consistent (free of any contradictions such as 1=2). [Note that mathematicians debate this is the case; see Hilberts Second Problem].
- Renee seems to have discovered such an inconsistency, that 1=2. This kind of contradiction destroys all of the elegance and beauty she finds In mathematics, which damages her psyche. She has basically disproven most of mathematics.
- This affects her mentally as if 1=2 then that same mechanism can be used to prove anything is anything.. or nothing. This drives her to suicide

but she survives.
- Carl now wants to leave Renee as he really can't comprehend this or fathom it

Story of Your Life

- A mother is talking about how she met "your" father and when you were born and the story of your life. It's all fairly cliche until a mention of ships in orbits and strange artifacts
- She, Louise Banks, is consulted by the military. They play her an audio file. She assumes it has to do with the aliens that must be about. She deduces that they have a different vocal system, not the typical larynx-like one that we have. She jwonders if because if this if its anatomically possible to understand each other (maybe they can make sounds that are imperceptible to us).
- She is called in again and gets to talk with them remotely through audio and video using a special device. They appear kind of like octopi
- They try and establish basic communications by pointing and making noise and then analyzing it.
- They hope to make more progress by trying to communicate in writing.
- Unfortunately that doesn't really help. They do not write individual words out but instead apply of series of transformations on top of symbols. This makes it very hard to communicate in the language by appending words because the transformation rules aren't known (it's not a simple space)
- She begins to think their writing system is independent of their speech system. Their writing system is two dimensional in the way that music notation expresses both the note to play and how to play it. They wonder why they seem to have two independent languages rather than one like humans. This ultimately means they can't use their writing as a back door to analyzing their primary language.
- In the background her daughter is growing up and has graduated and become a financial analyst.
- They begin to discuss math and physics but can only cover basic chemistry and arithmetic
- After a long time they finally get the aliens to respond positively to a physics concept - specifically Fermat's Principle, that the path taken by a ray between two given points is the one that can be traveled in the least time - a fairly advanced concept, especially mathematically. They begin to think what's easy math to us may be complex to them whereas what is easy to them may be complex to us. They use this to make more progress.
- She realizes the complex symbols they write to form sentences are done

in such a way that they do not assemble word by word but must know the entire sentence before writing it. It would be like writing a sentence by just making horizontal lines with the pen on and off the paper. The fact that they can do this so readily is impressive. She realizes this overlaps with Fermat's Principle. In that the ray must in a way already know what fastest path is before it starts moving through another medium (it's destination must be known before it can start moving)
- She begins experimenting more with their writing style herself and finds herself thinking in a similar way - going about expressing herself before her internal voice had put the words together
- She thinks about how Fermat's principle is an example of a variational law versus a causal law. We usually think of phsyical laws in terms of cause and effect (the result of something at some time results in something else at a later time). They can also be thought of in a variational way by looking at something over a period of time and seeing what must be maximized/minimized over time to explain its action.
- She believes our version of chronological/causational thinking explains how we think of free will. For the heptapods, however, they think more teleologically (like Fermat's Principle as described earlier). To them the future is in a way known and they are bound to act to it. As a result their language is all performative, that is, saying=doing. After all, if one is bound to a future what is the point in communicating with others besides the need for actually saying something (like "I do"" at a wedding, a performative action)
- The more she practices this the more she thinks like this - especially for memories. Her consciousness doesn't just move forward as our does but has glimpses of both past and future as it goes, all falling into place as a single memory
- She has the idea to do "Gift exchanges" with the aliens; akin to the performative nature of their communication
- They do a handful of these before the aliens abruptly leave

Thoughts

- What can we learn about our mind, how we think, and consciousness if we were to explore more with non-phonetic languages like heptapod b?
- There are examples of other forms of language that have implications on the way think. For example, I believe the Pirahã tribe has no past tense. This manifests itself culturally in that they don't record stories about the past. In a sense what's something has happened it's done and 'ceases to exist'. See the book Don't Sleep, There Are Snakes: Life and Language in the Amazonian Jungle – Daniel L. Everett

Seventy-Two Letters

- Robert uses the power of names to control simple clay dolls, but struggles to do more complex things and imitate the things in “real life” like a horse
- Robert goes to school in a boarding manner whereas Lionel, his friend, just comes for class during the day
- The school teaches the power of names as a religious doctrine, but the boys have read books that say there’s a science behind how the power of names can give “life”/“purpose” to things… even that an object/body may be compatible with more than one name … and that a simple name is often compatible with many bodies
- Apparently everything that was formed was formed a long time ago from homunculi which have simple continued to exist in different forms under different means of perception. Names work similarly to this in that they can be decomposed into parts that spell out their exact nature.
- This skill could be used to craft powerful automata (machines)
- Robert has come up with a way to impart human-like manual dexterity; a huge advancement in what the automatons can now do
- He demonstrates that they can do sculpture and even build themselves to a degree
- He explains he thinks he can make a general purpose version that any family could have; he thinks it would uplift the quality of life for people. The man he is talking with says the same could be achieved through new laws rather than turning the world of manufacturing and products on its head. Further, the man argues, it would actually put a lot of people out of a job. The man he is talking with, an important automata sculptor, says he will do his best to prevent Robert from achieving his vision - as it would destroy his automata industry.
- Robert (Stratton) is invited to Lord Fieldhurst’s house on reports of his work, privately - a fellow the the Royal Society
- Apparently Fieldhurst and others have found some way to grow homunculi to be the size of nearly actual people
- In theory if one had a powerful enough microscope one could look into a homunculi and see if the next generation would appear the same. But microscopes are not powerful enough. So they’ve grown the homunculi larger in order to study them. In theory this could be used to predict the genealogical future of a being
- They used this technique to see if there would be change in subsequent generations, but this did not happen. In humans though, they curiously stopped being able to reproduce after 5 generations. They believe this

implies that humans as a species can only exist for a fixed time, and they are within 5 generations of that ending.

- They leads them to wonder how new species come to exist in the first place. And why there don't seem to be limits on any of the current animals tested. They believe that the biological complexity of an organism implies fewer generations to exist.
- They must act fast before society realizes that humans will die out soon. One possible idea to solve this problem involves using the power of names on organic matter.
- Specifically entropy is defined as an increase in disorder on the molecular thermal level. Imparting a name to an inanimate object and giving it 'power' amounts to an increase in order - a kind of protection against entropy. It is what prevents the inanimate object from degrading into disorder faster - kind of like a protective spell/buff. The same doesn't seem to work on organic matter, at least at the thermal level. This seems to be the case because living things are already, by definition, a full embodiment of their name. And therefore imparting the powers of a name to them doesn't really do anything - it's already the case
- But that's not the case for an unformed homunculi, or an embryo. So in theory a name could be imparted at that point in its development
- They have a technique for imparting a name using a specially designed needles that embeds the name (as if it were written on paper). He was able to make a frog embryo into a tadpole and then even a species of frog
- If this could be done for humanity, then they could avoid their fate within 5 generations by artificially creating future generations
- They want Stratton to help them given his ability to make automata act in human like ways. He agrees as long as they help support his work to make cheap automata for all to use
- Willoughby, the man who didn't want Stratton's general purposes automata to be built because it would hurt his industry, says he's tried to get the union of sculptors of automata to take action against him but the royal society intervened on Stratton's behalf
- Stratton works on the project to save the human race and learns much, he helps improve dexterity of the humans they are trying to be able to create.
- It is speculated that all automata created so far don't actually reduce entropy, they seem to only engage in tasks that create more disorder. However, Stratton's work seems like it could soon enable automata to reduce entropy
- Stratton wonders if a sufficiently powerful 'name' could have been what created their species in the first place

- A Kabbalist (that focuses on the spiritual value of names) wants Stratton to share his findings so they can be used for purely spiritual purposes. Stratton refuses, not knowing how they'll be used. The Kabbalist mentions how they have come up with a name for making a golem write the name that animated itself.
- As the project to save humanity through artificial reproduction looks increasingly optimistic, some scientists think about using is for essentially eugenics (namely Lord Fieldhurst)
- Ashborne and Stratton decide to form a secret group within their secret group to prevent their work from being used as eugenics. They note that this issue could be avoided if the artificially reproduced had the ability to reproduce naturally themselves, at least for an additional generation or two. This would blunt the ability for eugenics to be implemented as it artificial reproduction would only be used when at the end of a naturally reproducing generation.
- Upon returning to his office he finds the Kabbalist that greeted him earlier dead there and his office ransacked. He realizes an assassin is there for him. Stratton is saved by one of Lord Fieldhurst's men at the last minute and thinks the Kabbalist's death was an unfortunate coincidence as Stratton himself was the main target.
- He looks at the Kabbalist's notes and realize that he could combine the work for making a golem say it's own name (or more broadly inscribe it by any means) with his to make an automaton reproduce. This would ultimately work by the same techniques as what they had already come up with to make a single fetus reproduce, except they would also implant the sperm with a name that replicated what their artificial process did. Thus the species would be able to reproduce itself because it would carry the name within itself. This basically entailed embedding the lexical representation of a being within its physical body.

Thoughts

- The history of Golems as a kind of historic/archaic computer/robot is an interesting parallel/idea.
- Lots of overlap with self-reproducing machines (which was just done recently this week - https://www.cnn.com/2021/11/29/americas/xenobots-self-replicating-robots-scn/index.html).
- Lots of overlap with stem cells and genetic engineering (and just programming). This came out right around the peak of stem cell research being a "big deal". Likewise for a more modern twist on eugenics
- The idea of robots/computers liberating the masses was interesting.
- Cool alternative universe. It is interesting how the whole Kabbalah thing combines programming (names) and robots (golems). Flashbacks to the

movie Pi

The Evolution of Human Science

- In the future embryo's can be enhanced to become super intelligent metahumans. Their way of thinking is incompatible with regular humans and therefore their development of science is independent and largely incomprehensible to humans. This is because they transmit their ideas and thoughts using DNT (digital neural transfer), which regular humans can't do.
- Hermeneutics, an extension of the science it was originally named for, whereby humans try to advance their science through trying to interpret the work of metahumans
- This field, while slow, has been fruitful. And despite metahumans being able to gift humans much greater technologies, the field still has value as the science that humans can deduce from it can advance human science that regular humans can interface with and thus apply. It's possible humans have ideas for applications that metahumans would overlook because they are a "step above" humans and might overlook human needs they don't have.
- Because a metahumans is made from a regular human and the two beings cannot really comprehend each other, very few metahumans are made as what parent wants to part with their child
- The story ends with a thesis that for humans should continue to pursue this despite the gifts metahumans can give them for the reasons above and because metahumans were created by humans after all

Thoughts

- Hermeneutics is more broadly the theory of interpretation, especially texts like the Bible. So it is interesting to see the concept somewhat turned on its head here and applied to metahumans.
- The story is somewhat of a parable to those that warn we shouldn't continue to enhance technology and science

Hell is the Absence of God

- Neil was born with a birth defect in his leg. Despite this he never hated (nor loved) God, he instead blamed others around him that treated him poorly because of hit.
- Sometimes angelic miracles happened in his world.
- It wasn't until he was older and his wife died as a side affect of a miracle brought down by an angel.
- This made him angry whereas for others it increased their devotion to God.

- He goes to support groups with others affected by miracles.
- He had always assumed he was meant to go to Hell. It was not a fiery place or anything like that, but simply a plane with no connection to God, where everyone existed just as they did on Earth. Heaven was supposedly better than Hell though even if Hell wasn't a punishment as it is traditionally depicted.
- This had to change now that his wife had died and gone to heaven. He had to do the same if he ever wanted to see her again - which ironically required loving God with all of his heart.
- Janice was another person, who had no legs, due to an angel's intervention. Shortly after this happened, the family was given visions of their since deceased family, which made them devout to God and they choose to instead view what the angel did as a blessing, not a curse.
- Janice chose to live her life as example showing that what happened to her was in fact a blessing. She had little problem convincing the typical person. She had the most trouble convincing people that were impaired like herself.
- Later an angel visited her and gave her back her legs. Janice saw this as a blessing but wondered why others weren't saved - she felt some guilt. Further if this was some kind of reward for trying to live as an example, then did she need to continue this way? She was now in an awkward position and did not know how to speak to those who had previously looked up to her. She choose to view getting her legs back and this awkward position as a challenge from God. At one such event Neil was there and challenged how she could view this as a challenge in the way that others like him were negatively affected.
- Ethan was raised by typical parents and wished for himself to one day receive a divine message. He was there when the angel that gave Janice her legs back was present. Ethan wasn't directly affected by it though, so wasn't sure what message to walk away with. He sought to reconcile his confusion by seeing who else was confused by the same miracle - Janice.
- For some who knew people were sent to hell, they'd simply commit suicide to rejoin them.
- Neil debates how he can possibly love God when loving God just to go to heaven obviously wouldn't constitute truly loving God.
- The humanists and fallen angels advise that one should make their own decision and decide for themselves. Often resulting in going to "hell" and proudly defying a "bad" God. They argued moral goodness came from within.
- Ethan setup regular meetings with Janice to try and uncover the purpose of what had happened to them

- Janice went on a pilgrimage to other sites of visitations, hoping for another. Ethan went as well despite protests from his wife.
- Neil decided he wanted to see heaven's light as a means of going to heaven. After all this had happened once to a murderer and despite what they had done were seen ascending to heaven. This was done by closely following an angel after it arrived and hoping to catch the brief glimmer of its light as it departed. Unfortunately though it appeared that those that failed at this always even to Hell.
- At a pilgrimage site, Neil meets Ethan. When he hears Janice is with him he wants to leave, but is convinced to stay. They talked and argued against Neil's plans, but Neil persisted.
- A visitations begins and Neil chases after it. He gets close, but hits a boulder which crumples his car and breaks his legs.
- His crash was apparently near Ethan's and Janice's campsight. They came over to him but there was little they could do. Janice is then hit by heaven's light. Then Neil is. When he is he seems to understand everything and loves God beyond unconditionally. Despite this, God ultimately sends him to Hell anyway despite dying while truly worthy of heaven. Janice lost her sight and Ethan found it his purpose to have been the one to witness all of this.
- Ethan goes on to preach Neil's story and say that God is not just, not kind, not merciful, and that true devotion requires understanding that. Unconditional love asks nothing, not even that it be returned. Neil now finally understands that and loves God all the same, even though in Hell God is not even aware of him.

Thoughts

- Very similar to the story of Job.. but with a more realistic ending
- It is a rather logical question to the "evil god problem"

Liking What you See: A Documentary

- A school is considering instituting a policy requiring people to use technology to combat lookism (judging people based on their attractiveness)
- The technology works by blocking the neurological circuit that judges attractiveness in the face for reproductive potential. Some people have this condition naturally, calliagnosia
- Communities have evolved based on this; freedom from the innate bias of attractiveness and its impacts on one's life
- Tamera was raised in such a community their whole life, in an environment where attractiveness played no role. Her parents thought it was a good way to escape toxic adolescent (Especially for females)

culture. It was one less way for a kid to have their future negatively impacted. Once she gets older though, Tamera decides to have her calli (calliagnosia) turned off
- She is incredibly relieved to find out through a mirror that she is in fact pretty
- Some argue against calli saying that once one is sufficiently educated they can be cognizant of the effects of attractiveness on themselves and work to selectively apply it. Some argue back that it truly can't be overridden completely
- Pro-calli groups team up to use outrage against advertisers (i.e. those that have manipulated our perception of beauty beyond biological standards into an extreme form of manipulation; a la social media and people today (or perhaps really the same thing..)). They say calli is a solution to that.
- Society and the characters increasingly debate if calli has value or not and whether it helps us go beyond biases or infantilizes or us or forces us to choose between the mind/body or if it limits natural beauty and even talent (downstream) or if it is will prevent others from seeing lookism in a society without total compliance
- Tamera realizes her old boyfriend that broke up with her is actually not as pretty as her. He eventually turns his calli off and realizes the same...
- The measure fails to be adopted by the school, but leads to further development,such as calli glasses that allow ones to selectively apply - something you might do in public or the work place or whatnot
- The measure failed largely due to an add put together by the ad and cosmetic industry that used computer visual enhancement on it's spokesman to artificially produce a speaker that viewers found particularly convincing
- Some argue that this an arms race and the only way to prevent it is to apply calli to not just attractiveness, but certain facial expressions ,etc. i.e. so that one focuses only on content not just delivery. Note such a technology embedded in glasses would create a world where people only wanted to wear one. It's a situation that the world will have to deal with now.

Thoughts

- An interesting warning about the future - a kind of arms race that could develop as we hack beauty even further