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Assignment 3: Short Story

Assignment 2 Review: Memory Chips are microbot flash drives for the human brain that are ingested in the form of a pill. The user can access or download information from the Memory Chip or keep it attached to his or her brain as an extension of memory storage.

Clarification: The library mentioned in the story is not a database; it works like a regular library. The library has collections of online books and texts to lend out so if you want to check one out, you can use a library Memory Chip to download the book into your brain. When the book is due to be returned, you must return to the library and use a chip to erase the book from your memories. You can also rent an old Chip from the library for up to two weeks.

“ODO! Come here,” Dasha yelled as she squinted at her holographic screen. “HURRY!”

“What? Why are you so loud? This better be good,” Odo mumbled as he stomped over from his room.

“It’s an article about that library we usually go to. You know, where we saw the Memory Chips for rent. It says that one of them, twelve years old or something, malfunctioned on the job and got stuck in someone’s brain. Not the floating kind of stuck, but actually stuck in some membrane. Didn’t you almost borrow one to download a book before we left?” Dasha goadingly asked.

Odo sniffled indignantly.

“Yeah but a lot of people use them. I’m sure it’s nothing to freak out about. It’s just an accident. You know those old transportation things they call cars or something? Yeah well, the accident rates for those are way higher. I don’t understand why people still use them today when they could just use autoflys. We could be saving so much land, and Mom says housing prices would drop if everyone converted to the sky. They’re holding up so much of the housing market and like basically the entire economy because they’re too selfish to switch to autoflys.”

Dasha interrupted Odo before he could continue.

“Wow, that was a lot of big words that you probably don’t even understand. In fact, I think you’ll end up like those selfish people because I don’t think you’ll ever be able to afford a Memory Chip or autofly yourself. HA! I guess you should get ready to have a library Memory Chip stuck in your brain too,” Dasha haughtily snapped as she turned her attention back to scrolling through articles.

“Hey, you’re being mean. MOMMM,” Odo yelled as he ran out of the room in search of their mother and some answers. He raced downstairs to where their mom was usually cooking lunch at this hour but was greeted by an empty kitchen and the smell of overspiced lasagna. He retched and changed his target to his favorite baseball-sized GMO strawberries.

“Honey, I’m over here. You better not be eating those strawberries again. You’ve already had one today. You won’t have enough room for lunch.”

With a strawberry clutched behind his back, Odo inched over to the VR armchair where Mrs. Clyd sat and whined, “But I don’t want lunch, Mom. Why are we having lasagna again? We’ve had it for four days in a row already.”

“You don’t like it? But honey, all the lasagna recipes taste different. Also, I didn’t have time to download any other cookbooks when we were at the library. You know the library books

can only be downloaded with those old library Chips and they're so slow at downloading," Mrs. Clyd exasperatedly sighed. "I thought I might as well go through all the recipes in the cookbook I downloaded. Unfortunately for you, lunch is still going to be lasagna until we go to the library this afternoon."

"Fine," Odo huffed and backed away.

"And put that strawberry back!" Mrs. Clyd hollered before he could escape.

Odo devoured the strawberry in three defensive chomps and slowly shuffled back to his mother as he remembered his original reason for needing Mom. Noticing the strawberry gone, his mother sighed and took off the VR headset.

"Odo, I've told y..." She paused, noticing his odd expression. "What's wrong?"

"Mom, Dasha says that I won't be able to afford an autofly when I'm older. What... What if I die in a car? What if I'm the one holding the economy back?" Odo stared at his feet.

Odo's mom beckoned him to come sit on her armrest and pulled him into a comforting embrace.

"Oh honey, don't listen to her. It's not as simple as that. You see all those autoflys outside the window? Almost everyone doesn't fully own their own because they're still paying them off. Think of Mommy and Daddy. Together, we make almost \$150,000, which is more than 75% of the population. But look at us, we still have thirty years left on the home mortgage, twenty-five years left on that autofly that we share, and four years left on two Memory Chips. That's completely normal,"

She paused again.

"The thing is, honey, we technically own those, and Mommy and Daddy will try our best to pay it off before leaving them for you and Dasha," she said as she stroked Odo's hair.

“But... Mom... Dasha said that someone got a twelve year old Memory Chip stuck in their brain. I... I don't want that to happen. I don't want your old Memory Chip. I don't want your Memory Chip stuck in my brain.” Odo's voice grew louder as a tantrum started to rise.

“What? When did this happen? Honey. I'm sure it was a freak accident. It only happens once every couple years. Well...” Mrs. Clyd was about to retract her statement as she nervously remembered all the incidents this year with the rental library Chips, but one look at Odo's face made her stop.

“Mom, I'm scared,” Odo whispered.

“I know Odo, but even if these things happen, there's nothing we can do about it. Odo, if you don't have a Memory Chip, you can't get a job. You can't compete with anyone without a Memory Chip. A lot of places require you to bring your own Memory Chip, and the jobs that provide them are all corporate and highly competitive. They start recruiting in middle school so you better be ready in a few years,” Mrs. Clyd gently tapped Odo's nose before continuing. “There are no good jobs left that don't need a Memory Chip. You don't want to live in the Tent District, do you?”

“No... Ok,” Odo says with a sigh before jumping up to head for the stairs.

Mrs. Clyd made a move to follow Odo but stopped after a few steps. After some thought, she said, “Honey, you know what, let's go to the library early today. Grab a bite of the lasagna and we'll head out.”

An hour later, Mrs. Clyd, Dasha, and Odo piled into the autofly and made their way to the library. The library was a dusty old building located on the other side of town. The city had decided to station it next to the Tent District where it would be needed the most. But most knew

that the city also wanted the library as well as any accidents or scandals to be as far away from downtown and City Hall as possible.

In the library, there were no physical books left and the digital ones were only accessible through donated older generation Memory Chips, which were slow but still functional. The first-generation Chips are the ones rented out. To be optimistic, occasional use usually does not lead to serious side effects and renters can get some use out of them. Unfortunately, they also don't have a choice because they can't afford personal Memory Chips and the city had decided that the newer versions would be more beneficial staying in the library. With luck, someone might stumble upon a slightly newer generation chip to download books with but the library usually sells them soon after. A single third-generation Memory Chip resale could keep the library afloat for two months. Even though donations were now rare, the city used the donations as an excuse to transfer library funds to the new Tent District police force, which they deemed necessary following the 2092 autofly bubble burst and the spike in Tent District inhabitants.

The final stretch to the library flew over a corner of the Tent District and Odo fearfully peered out the window at the disheveled, muddy structures below. He saw a woman clinging to the leg of a man in uniform as she exchanged words with him and a couple other men in uniform. It quickly became heated and Odo ducked his head down as the man shoved the woman off his leg.

"Mom, how did they end up there?" Odo quietly asks.

"It's complicated, honey. You'll understand when you're older."

Odo was about pry for a different answer but the autofly had landed at the library.

“Honey, you guys go first. I have to go return a book,” Mrs. Clyd said as she headed for a machine just left of the entrance

As Dasha and Odo entered the library, they were quickly distracted by an argument at the Memory Chip hourly rent machines.

“Please. Just ten more minutes,” a man pleaded. He was wearing a poorly washed plaid shirt and looked like he had tried to make himself appear presentable. “I have a chance at a job. Please, this might be my only chance. I’ve been here for thirty-two years.”

“So what? I’m still here. What’s wrong with being here? Now that you have a chance at a job, you think you can look down on us other Tent dwellers and take advantage of us, huh? If you’re so great, why are you still using SHARED Memory Chips? I’m telling you, your time is up and it’s my turn,” a man in grime covered clothes gleefully shouted as he reached for the Memory Chip, which had just been cleaned and ejected by the dispenser machine for the next user.

“No, please....” the man cried as he tried to block the other man. Odo lost sight of them as more people started to surround them and chant for a fight.

“DARLA! ODO! Oh my lord, we can’t stay here. We are leaving right this instant.”

Mrs. Clyd raced up to them and practically dragged them out by the collars. The drive home was uncomfortably quiet as Mrs. Clyd tried to calm her nerves and the two kids tried to hide their disappointment.

The autofly locked into position on the roof and the three somberly climbed out.

Mrs. Clyd sighed and broke the silence. “Poor babies, I know you’re disappointed... I know! How about I call up Elwyn and see if he can come over for dinner?”

She got no reply but smiled as she saw Dasha and Odo add a spring to their step as they headed back to the house.

Elwyn was Odo's idol. He was an exceptionally bright kid from a family right outside of Tent District. He basically started from the bottom of the functional society and upon winning the State Supermind competition at the age of seven, he became the media's darling and the hero of their city. He was sponsored by one of the biggest corporations in the country and was guaranteed access to all of the latest models of the Memory Chip for his studies. He was guaranteed a well-paying job upon graduation of a mandated doctorate, but unknown to him or the public, he had signed a forty year work contract.

Still, he was the example that all the parents pointed out to their children. He was also a story that small-government advocates used when new bills to help tent district inhabitants appeared. All kids were given a chance at a public education but the quality varied drastically around the city and country. Still, they argued that those who don't work hard enough created their own fate, which inevitably was in the Tent District.

He also happened to be Odo and Dasha's cousin a couple times removed. Mrs. Clyd tried not to bother him too much but she knew that she had to occasionally pull out her trump card. She cheerfully entered her house and busied herself in the kitchen making another course of lasagna.

A few hours later, Mr. Clyd had returned from work and Elwyn had arrived with a gift of textbooks and some bound study notes. He took them out at the dinner table and awkwardly tried to converse with Mrs. Clyd.

“Hey Mrs. Clyd, I know it’s not much but I brought some school stuff for Dasha and Odo. I was really hoping I could give them some of my scholarship technology but I can’t because of my contract. I asked last week and the man in charge said that the equipment should remain unused or go to waste rather than be used by someone without company clearance. It’s absolutely ridiculous. Why hasn’t the government done something about these stupid rules and all the corporate waste?” Elwyn ranted.

Mrs. Clyd gave him an understanding smile and said, “It’s ok, Elwyn. We understand. The rules are complicated. We’re just glad you’re here.”

“Everyone, dinner’s ready!”

Dinner started as Elwyn talked about the latest developments in his studies and the latest secretive corporate news he had been exposed to. The lighthearted conversation was filled with smiles and laughter as they listened to his witty tales and admired his animated storytelling skills. However, the conversation soon took a turn when Dasha awkwardly tried to impress Elwyn.

“Did you hear the latest update about the Tent district today? The government is increasing the rent on the land. I don’t know why they try though. The land is basically worthless now that it has been destroyed by the disgusting runoff from those Tents,” Dasha said as she wrinkled her nose with disgust.

There was an awkward silence as everyone watched Elwyn slowly place his spoon down on the table and gather his thoughts. A hush fell on the room as Elwyn forcefully and slowly said, “Don’t talk about the Tent District as if it’s a shameful place to be.”

Surprised by the sudden change of tone, everyone tentatively looked up from their food at Elwyn.

Elwyn paused and then continued with a softer tone. “People often forget that the government created the Tent District when they couldn’t pass any legislation that would make Memory Chips accessible. People are only there because they couldn’t afford a Memory Chip and after the Tech Revolution of 2079, they can’t get any job with a reasonable pay. With a bad stroke of luck, anyone could find themselves in the Tent District and once you’re there, it’s almost impossible to leave.”

Silence. Elwyn continued.

“I don’t think there exists a point in history where the population was more financially insecure than right now. Home mortgages, autofly loans, Memory Chip loans, all that debt is just accumulating. You never know when you’ll lose control and find that you’ve lost everything you’ve worked for your entire life.”

Mr. Clyd coughed uncomfortably. Elwyn took notice and tried to lighten the mood.

“Anyway, did you know that the new tenth-generation Memory Chips only cost \$750 to manufacture? The only reason that they cost \$14,000 is because Thoughts Inc. know that there are always people who will do anything to get ahead in the job market.”

Looking over at Mr. and Mrs. Clyd, Elwyn said, “You guys took a loan out for second-hand eighth generation Memory Chips two months ago, right? They cost \$540 to manufacture. Isn’t that insane?”

This solicited some uncomfortable chuckles from Mr. and Mrs. Clyd. Elwyn tried again.

“Oh! Did you guys listen to that murder case that’s been all over the news? It turns out the Memory Chip of the man who had been convicted had been intentionally corrupted, which made him confess to the crime. The court said that they were able to search his mind and uncover some memories that proved he wasn’t at the scene! Justice has been served. It’s good to

know that you can't get away with everything when you have money," Elwyn says with a satisfied smirk.

These comments did not have their intended bravo effects and several more uncomfortable minutes of silence passed. Then, Elwyn hears some sniffing behind him. He turns around and sees Odo.

"Elwyn, why doesn't the city do something? Why doesn't the government do something?"

Elwyn nervously glanced over at the parents and softly replied, "It's hard to explain. How about I tell you about what it's like to have a Memory Chip after dinner? That topic is a lot more exciting!"

Mr. Clyd took over and the cloud over dinner was gently parted.

After dinner, Odo excitedly pulled Elwyn to his room.

"Elwyn! Quick, tell me! What's it like to have a Memory Chip in your brain?"

"It's absolutely amazing! I can't wait for when you get one and see all the things it can do. Did you know that scientists have come up with a method to use Chips to make the brain remember forgotten memories?"

Odo's eyes widened and he shook his head in awe.

"Yeah! It's all over the news. It's pretty new but they're even using it in court cases, like the one I mentioned earlier. All the high-profile cases use bits of this technology now. It's really cool. A lot of defendants object to its use since it only has an 94% rate of accuracy but that's high enough that the courts can legally use it."

Elwyn excitedly continues.

“Did you know that the only place in the city where there is crime is in Tent District? The crime rate everywhere else is basically zero. That’s because of the Memory Chip! Isn’t that incredible? There aren’t any unsolved crimes left and police can even predict when and where crimes will occur and who is involved.”

Elwyn paused as he tried to figure out why he was suddenly uncomfortable with this piece of information. However, widespread surveillance wasn’t new in 2098 and one look at Odo made him brush the thought aside to continue his storytelling.

“Yeah, there’s this app. It wasn’t released by the Thoughts Inc. but it still works really well. You can either pay for it or allow it to collect your data, but if you let the app collect your data, you can do super cool stuff. Look here, all my data is postmarked with size and date. I can go back and see the contents. I can even sell them and make some money! The new data is worth a lot.”

Elwyn grinned in satisfaction at the app. He flipped through his recent data and was reminded of some recent ads that had appeared in his thoughts after he read his grocery list. He failed to bat the commercial thoughts away so he turned his attention to Odo and jokingly said, “You know.... If you’re not careful and a machine plants a bug on your Chip, or if your Chip is licensed to you by your job, they can know what’s going on in your mind.” Forgetting his worries about the personalized ads, Elwyn sent a scare poke in Odo’s direction before reaching out to start a tickle fight.

After they had calmed down, Elwyn got reflective.

“Well, it’s great but it’s not all amazing. I probably shouldn’t tell you this, but a lot of people have a smooth life path but still end up in the Tent Districts because of their Memory Chip,” Elwyn says before pausing to take a deep breath.

“Most people have so much debt already that they think a little more doesn’t make a difference. You know how your mom always tells you that you can’t have everything you want? Well, when you make your own money, there’s no one telling you that anymore. A lot of people struggle with what we adults call financial literacy. Some ad services can know exactly what you’re thinking and some people just can’t resist the temptation in their mind.”

“Wow...” Odo slowly said as he looked at Elwyn with wide eyes, but before Odo could ask a question, they heard some commotion and yelling downstairs. They raced out to the top of the staircase and saw Mr. Clyd knelt beside a convulsing Mrs. Clyd with broken dishes strewn everywhere. Elwyn gasped, covered Odo’s eyes, and quickly led Odo back to his room as Mr. Clyd yelled in the background, “Honey, what’s going on?”

Critical Analysis

The short story I wrote covered a broad range of topics regarding the problems and ethical concerns related to the Memory Chip, a technology that can manipulate the human brain. Even in our current society, there are already many known methods to use human psychology to manipulate people and their memories. One of the most prominent examples of this manipulation can be seen in police questioning methods. There have been many studies done that demonstrate how memories could be distorted,¹ even to the extent of confessing to crimes the person didn't commit.² There are also many advances in the study of how the brain works, and scientists have already discovered the process of making memories.³ An additional concept that could make the idea of Memory Chips easier to digest is the discovery that memories reside in specific brain cells,⁴ which means the ability to alter specific brain cells and the creation of the Memory Chip is not as unlikely as some may think. I will not elaborate on each of these sources individually but together, these studies should help readers understand that the scenarios from the short story may not be that far off in the future, and the harmful implications of this technology on society could have a direct impact on human rights.

I think that the Memory Chip is not a futuristic technology; it is simply the embodiment of manipulative tactics used today in a product. As proven by the four studies mentioned in the beginning of this analysis, the ability to manipulate the brain already exists; the Memory Chip is simply the chemical version of this manipulation that allows direct access to the brain. A person

¹ Dodgson, Lindsay. "Our brains sometimes create 'false memories' - but science suggests we could be better off this way." Business Insider. Dec, 2017. Accessed Dec, 2020.
<https://www.businessinsider.com/science-of-false-memories-2017-12>

² Shaw, J. and S. Porter. "Constructing Rich False Memories of Committing Crime." *Psychological Science* 26 Iss. 3 (2015): 291 - 301. <https://doi.org/10.1177/0956797614562862>

³ Miller, Greg. "How Our Brains Make Memories." Smithsonian Magazine. May 2010. Accessed Dec, 2020.
<https://www.smithsonianmag.com/science-nature/how-our-brains-make-memories-14466850/>

⁴ Delude, Cathryn. "Researchers show that memories reside in specific brain cells." MIT News. March, 2020. Accessed Dec, 2020. <https://news.mit.edu/2012/conjuring-memories-artificially-0322>

does not need a device to have their mind manipulated but the device will allow someone to control the results of the manipulation of his or her own mind or someone else's mind. The brain controls everything humans do and allows us to feel, think, remember, and act. The ability to control and manipulate this essential organ leads to two current and important questions: Should technology companies be limited by legislation and do democratic governments have the power to limit tech companies?

There are existing pieces of legislation around the world, such as GDPR in the EU and PIPEDA in Canada, that move to protect user data but there is no consensus on the rights and protection of users in the United States of America⁵, which is home to some of the biggest tech companies in the world and the most frequent abusers of data policies. The article "Tech Firms need More Regulation"⁶ elaborates how the greatest risk in the tech industry is not overregulation but not enough regulation. There are many existing examples of how the U.S. Congress had failed to control the influences and punish the wrongdoings of tech companies, such as Cambridge Analytica. Through the use of financial fines, no one is being held responsible for decisions that have resounding negative impacts around the world. There is also no clear consensus on the control, ownership, and distribution of data which leads to many abusive data practices, such as Google's privacy policy, PRISM, and NSA's permanent data storage. Ideally, I would like to believe that tech companies and the government have a moral obligation to make ethical technology and decisions but it is also clear that there are a lot of other factors that come into play, such as small or big government, capitalist interests, the

⁵ "USA: Data Protection Laws and Regulations 2020." June, 2020. Accessed Dec, 2020. <https://iclg.com/practice-areas/data-protection-laws-and-regulations/usa#:~:text=There%20is%20no%20single%20principal,Code%20%C2%A7%2041%20et%20seq.>

⁶ Brown, Carol Ann. Smith, Brad. "Tech Firms need More Regulation." *The Atlantic*. September, 2019. Accessed Dec, 2020. <https://www.theatlantic.com/ideas/archive/2019/09/please-regulate-us/597613/>

government's ability to keep up with the private sector and innovation, and the logistics of technology and algorithms.

A very important question that the world has been forced to confront this year is should technology accessibility be a human right? 2020 has changed how the world and society functions in many groundbreaking ways and will prove to be a vital example in the future when legislative bodies debate the necessity of universal internet accessibility again. The problem with the current debate for universal internet accessibility as a human right, as declared by the UN⁷, is that there is no existing international legal groundwork that will protect the other rights of users, such as privacy. 193 UN members adopted the Sustainable Development Goals document from 2015, which included the right to internet access, but many of these members do not currently have the framework to limit possible repercussions that would come with the massive influxes of data from national or international internet accessibility.

Majority of Americans feel as if they have little control over data collected about them by companies and the government

% of U.S. adults who say ...

		Companies	The government
Lack of control	They have very little/no control over the data ____ collect(s)	81%	84%
Risks outweigh benefits	Potential risks of ____ collecting data about them outweigh the benefits	81%	66%
Concern over data use	They are very/somewhat concerned about how ____ use(s) the data collected	79%	64%
Lack of understanding about data use	They have very little/no understanding about what ____ do/does with the data collected	59%	78%

Note: Those who did not give an answer or who gave other responses are not shown.
Source: Survey conducted June 3-17, 2019.
"Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information"

PEW RESEARCH CENTER

Figure 1. Pew Research Center⁸

In the study "The dynamics of big data and human rights: the case of scientific research,"⁹ a balance between rights to privacy and rights to science, which is applied in the

⁷ Howell, Catherine. West, Darrell M. "The internet as a human right." The Brookings Institute. Nov, 2016. Accessed Dec, 2020. <https://www.brookings.edu/blog/techtank/2016/11/07/the-internet-as-a-human-right/>

⁸ Auxier, Brooke. Rainie, Lee. Anderson, Monica. Perrin, Andrew. Kumar, Madhu. Turner, Erica. "Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information." Pew Research Center. Nov, 2019. Accessed Dec, 2020.

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⁹ Vayena, Effy, and John Tasioulas. "The dynamics of big data and human rights: the case of scientific research." *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences* vol. 374, Issue 2083 (2016). doi:10.1098/rsta.2016.0129

creation of technology, could be created through the specifications and entitlements of each human right. It cites the technological advances that were made possible by health data collection and the sharing of data with third party sources, but it also cited the importance of user consent and control. As the study says, “In other words, for people to be able to exercise their rights of science and privacy in an informed way, they need to be informed and supported in doing so.” This is clearly missing in the government oversight of their own data collection agencies and the oversight of the biggest technology companies in the world. The material covered in this study can be extended to the broad context of data collection. There must be legislation that prevents the unnecessary collection and storage of data.

The United States of America is a clear example of these flaws. As seen in the study “Americans and Privacy: Concerned, Confused and Feeling Lack of Control over their Personal Information,” users are concerned that they have no control over the collection, storage, and use of their personal data, and I believe that the use of surveillance in democratic countries should be considered unethical. The implications of the study and the precedent that the U.S. government has set has already created national and international scandals. PRISM is a current example in the U.S.A. where the government not only does not limit the reach of internet companies but also utilizes their unethically collected data for surveillance of the citizens of democratic countries. If democracy is based on a set of principles ingrained in the freedom and rights of the people, do the people really have power when their own government applies wide scale and indiscriminate surveillance and data collection techniques? Can elections in a democratic country be considered free and fair when politicians turn a blind eye to the onset of political money and dark money?

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