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Write a Book IQP

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a
message
from
MARS



If we choose to destroy Earth, then we better make
ourselves another place to call home...

Sienna McDowell Victoria Loehle Simon Escapa

SYNOPSIS

2050:

The settlement on Mars has been cut off from Earth for nearly 5 years. Its core electromechanical systems are compromised, and its people lack the resources required to make the appropriate repairs—let alone survive. In spite of their efforts to conserve what little food and water and oxygen they still have, all of them are running out of time...

The Desperates back on Earth have mastered Darwinian survival, while the STEM-Heads have pursued a more discreet evasion of Death since the Collapse of 2045. Yet all of them dream of escaping from their overheated, overpopulated Hell called Home.

As the mission to clean-up after First Mars and its never-completed Genesis Program leads a small STEM-Head band towards Kennedy Space Center, rumors of a distant paradise reach Desperate leaders, and, all of sudden, all eyes are back on Mars...

WARNING: IQP PAPER AHEAD

Believe or not, this book was written to complete a graduation requirement. At Worcester Polytechnic Institute, a haven for STEM-Heads in the heart of Massachusetts, the Interactive Qualifying Project (IQP) is assigned to students during their junior year to provide them with an opportunity to integrate theory and practice and apply what they are learning in class towards the betterment of society. In this case, we were given an opportunity to do research on a topic of our choosing and write a book about it. Being engineering students, the obvious choice was to go for a science fiction novel.

Thus the research began.

After learning about the technologies being developed today for the societies of tomorrow, we decided to altogether abandon Earth and join the earliest human inhabitants of Mars.

Why?

Because Earth has been ravaged by global warming, and people can no longer afford to abide by laws while simultaneously acquiring resources necessary to survive. Therefore, organized society has collapsed.

Then we asked ourselves: Once Earth meets its end, will our species be able to start over on Mars?

Then the writing began...

The most difficult part of this whole process was meshing our stories together, given we are three different people with three conflicting schedules and three unique writing styles. In the beginning, we were rarely on the same page. Even towards the end, communication issues were still quite prevalent; however, we kept moving forward and managed to bring our story to life.

All in all, this was a challenge and an adventure, unforgettable for so many reasons in so many ways, a true learning experience.

ACKNOWLEDGEMENTS

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Thank you for being so patient with us; this process took a lot longer than we thought it would. Thank you for reading everything along the way and helping us improve our stories. We are proud of what we accomplished, and we hope you enjoy reading it at least as much as we enjoyed writing it.

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Last but not least, we would like to thank our readers for giving this book a shot. Please enjoy!

[PART I;; MISSED MESSAGES FROM MARS]

[earth;; Cider]

“Hey! Farea! Say goodbye!”

Farea presses her nose against the little oval window. A reflective black building beyond it nearly blinds her, as she attempts to read all the letters of the word on top of the building. T-E-R-M-I-N-A-L. She returns her attention to the runaway and the wings of the airplane. The engines are starting to roar, but they do not hurt her ears. She glances down at her wristwatch. Its small screen reads ‘30 dB’¹ in green lights. She does not know what the number means, but the green light surely indicates that it is good.

“Mommy... why do we need to fly again?”

“What do you mean?”

“I mean, I made friends here. We were here for four years. Why do we need to move again?”

She hears a faint grunt in the background, like a man clearing his throat.

“Your dad needs to work, honey. He’s waiting for us in our new home.”

She looks out the window again, reviving her happy moments. She tries to forget the sorrow of leaving everyone behind... It had been hard to say goodbye to Mr. Garcia and his dog Queda.

“Miss,” says a male voice.

“What’s home, mom?” she says, ignoring the voice. “We always move. We can’t even stay more than four years in one location. I lived in so many places.” She starts crying. “Do I have a home, mom?”

Farea brings her head to her mom’s chest.

“Home... is where we live.”

“Hey there...” the male voice says, closer than before.

Farea opens her eyes.

“Hey there,” a male voice asks her. “Are you going to order anything?”

She is lying on her extended arm, occupying the places of two people at the counter. She lifts her gaze and sees the bartender looking down at her. His eyes are deep brown, like the color of tree bark, and he has a pinkish-white scar on his left cheek. She figures that it has come from a

¹ (Banke 2016)

sharp blade. Maybe a knife fight. His sleeveless black shirt does not fit him well; his muscular deltoids and pectorals seem to be bursting out of it, and Farea can see the cuts of his abs outlined through the fabric. Blushing a little bit, she sits straight up. With a slight flick of her hands, she brings her long dark brown hair behind her back.

“Sorry. Just lost in thoughts,” she says.

Farea looks at the bartender again. His tan arms are flexed, balling his biceps, and veins are sticking out of his skin, giving her the chills. He is holding a transparent mug with his left hand, cleaning it with a white cloth.

“There aren’t many people here now, but you should know that lying down like that is very impolite.”

She glances around the bar. A few men are sitting at the counter, drinking down their sorrows. Several more are sitting at tables, some sharing laughs, others just playing cards and asking for more beer. She sees a group of ten people gathered at the far end. Not surprisingly, she is the only girl at the bar.

“Was I lying down like that for long?” she asks, apologizing with her eyes.

The bartender shakes his head, as he inspects the mug in his left hand. “For about a minute. Were you sleeping?”

“More like remembering... Anyways, what do you have to offer to a young lady like me?” she inquires with a sweet smile on her face.

“Hmmm...” He does not seem to be interested by her. “I have a couple of bottles of brandy; I have vodka, gin, cider, and, of course, beer.”

“I’ll get some cider,” she says.

“Cider it is.” He crouches and comes back up with a wide transparent container, filled about halfway up with a greenish liquid. Farea can smell the sweet taste of apples even before he removes the lid. He scoops some of the liquid into the mug he has just finished cleaning. Then he wipes the rim and the outsides with the same white cloth.

“There you go.” He slides the mug in front of her.

The liquid is sluggish. Unremoved pulp, traces of apple skin. She frowns at it and eyes the bartender.

“The filter broke last night, sorry about that.”

She nods and takes a drink of the cider. Closing her eyes, she remembers the apple pies her mom used to cook for her... The way the aroma of hot butter and cinnamon filled the kitchen, as each one baked. The way her mom would shoo her dad away from the cooling rack while she and Farea were choosing plates and utensils to serve with it. The way the warm crust melted in her mouth, as she took her first bite... Her thoughts alone are enough to make her mouth water.

Five years have passed since Farea last saw her parents. *‘I wonder how mom is doing,’* she asks herself. She remembers the nights when she and her dad would sit out on the cliffs and watch the stars together. He would point to several, drawing beautiful pictures in the sky of people and animals. Then he would tell stories about each of them. Her mom would join them later, and they would all walk back towards the house together. Farea smiles, just remembering.

“Thinking about good ol’ times, are ya?” the bartender asks.

She blankly stares at the mug, holding it with her two hands.

“I miss my parents, you know.”

“Me, too.” He turns around and reaches for a small frame on the shelves behind him. She sees an image of a man wearing a pilot’s hat and a woman in a floral-patterned dress in front of an airplane. The picture comes to life², and the woman kisses the man before she leaves the frame. The man starts waving. Sharp chin, brown eyes, tan, tall and standing straight, he looks ambitious. He boards the plane, and it takes off. He later arrives, and, as the plane comes down, the woman comes to greet him. They return to the original pose, and the sequence plays again.

“My old pops loved to fly... and drink, unfortunately,” he says with a slight touch of sorrow in his voice.

“What happened?” Farea asks.

“Car crash. All three of us were there.” He brings his fingers to his scar. “My mom didn’t survive, either.” He looks at two bottles of Bailey’s Cream on the shelves. Then he brings two shot glasses and a piece of lemon to the counter. He serves a transparent liquid, and while he cuts the lemon into thin wedges he slides the other shot glass to Farea. “May they rest in peace for eternity.” He takes his and pours down the shot. Immediately, he bites on the lemon. Farea does the same with her shot, but the alcohol gets to her, and she gasps.

“Quick! The lemon!” He tosses a lemon wedge to her.

She bites the whole lemon, not caring about the skin.

“Was that your first time?” the bartender asks.

“Well... I’m technically not old enough...”

The bartender chuckles. “You don’t need to worry.”

She grins at him then looks around. The walls are well garnished with sea-faring equipment and old hand-painted seascapes. She sees an antiquated manual harpoon, the kind they used in *Moby Dick*. She also recognizes different fishing rods and nets. As a whole, the bar is relatively small. Only a couple of windows per wall, just nine tables in addition to the counter. In front of her, between two shelves stocked with empty liquor bottles, the window gives a view of the ocean. The pavement between the bar and the boardwalk, illuminated with a dimmed LED street light, reflects the pale light of the moon. She cannot see further than a couple of feet beyond the window, since the street lights are sensitive to movement³.

“So... What brings a woman to the docks?” the bartender asks, as he starts to clean his shot glass. “Dangerous place for a young woman like you.”

Farea does not reply immediately. Instead, she takes a good gulp of her cider. “Killing time before a meeting. What better place than at a bar?”

“I know, right?” he says. “But still. Last time a girl came around, things went wrong.”

“Hmm... Rape?”

“No. Barfight. I had to close down for a couple of days.”

² (Chung and Oh 1997)

³ (Woods 2014)

Farea raises an eyebrow at him. “Don’t you have robots to clean around the place?⁴”

He shakes his head. “They all died in the process... Ever since the web went down, it’s been impossible to find someone to fix them for me. I can’t even buy a new one, for goddamn sake! I have to clean everything by hand!”

“You run this place alone?” she asks. “That’s impressive.”

“You wish,” the bartender says while putting the shot glasses back in a cupboard. “If it wasn’t for them,” he points to a group at the far end, “the bar would be long gone.”

She looks at the group. The usual gang, ten people at most, all chatting while playing cards. She sees a big guy dressed in red leading the conversation.

“A gang?” she asks.

“Yes. They help me manage. Not the biggest one out there, but good enough. They own a small farm.”

“Farm?” she asks surprised. “You mean like a big house on a ranch?”

The bartender laughs. “Not that kind of farm. Places like that have become obsolete since urbanization⁵. Vertical⁶ farms and stem cell meats⁷ are where we get most of our ingredients from.”

Farea takes a sip from her cider.

“How about this building? I thought the power grid died after the Collapse.”

“It did, but we manage. We get most of our power from tidal and wind energy. We use solar in summer and store the extra energy in hydrogen^{8,9}. Keeps us alive in the coldest of days.”

“So basically not letting available energy go to waste.”

He nods.

“On top of that, we have great insulation. And, if everything else fails, I always have weights to lift to keep me warm.”

She chuckles and closes her eyes. Taking the mug, she takes a good gulp of the greenish liquid. The sluggish juice goes down her throat very slowly. Swallowing again, she gets down from her stool.

“I’ll be back,” she says to the bartender.

The aroma of the cider starts to block her nostrils, and she looks for the closest window. Rubbing her nose, she starts walking along the counter to the far wall. She passes by two lonely men sitting at the counter, and she hears the conversations at the table she passes before arriving to the window. Farea puts both arms on the stool of the double-hung panes of glass. Lifting the lower sash, she lets some of the mild air come in. A weak breeze blows her hair. Smelling the seawater in the air, she breathes in deeply. Then she looks at her wrist-watch. It might be more than twelve years old now, but the little electronic timepiece is still good enough for her. She flicks it a couple of times before finding the correct output screen.

⁴ (Taylor, et al. 2005)

⁵ (Satterthwaite, McGranahan and Tacoli 2010)

⁶ (Despommier 2009)

⁷ (Post 2012)

⁸ (Barreto, Makihira and Riahi 2003)

⁹ (Sevilla and Mokaya 2014)

COUNTDOWN FOR THE MEETING: 00:59:20 minutes

“Hey!” says someone sitting at the nearest table. “Can’t you close that window?”

She turns around and meets the eyes of a middle age man. His forehead is sunburnt and slightly wrinkly. Dressed in a yellow raincoat and scruffed with the early stages of a beard, the fisherman looks like he has just come back from several days at sea.

“It’s kind of hot...” she tells him with a slightly annoyed voice.

“Ma’am, with all due respect, consult others. Lad Jim is a bit seasick today, and we need him better before tomorrow.”

She quickly glances at the other people sitting beside him. All of them are glaring at her and nodding in agreement with him. Reluctantly and a little bit pissed, she lowers the sash, but she does not end up fully closing the window. She looks at them one last time.

“With all these jellyfish¹⁰, fishing’s become so hard nowadays!” says the same fisherman who scolded her. “If only my father didn’t overfish¹¹, I wouldn’t be spending...”

The conversation fades, as she walks back towards her seat at the counter. She looks up and notices two men speaking to each other at a table a few steps ahead. They are not fishermen: One of them, tall, with short brown hair and slender arms, is wearing a polo shirt. As she meets his dark brown eyes, he turns to the man sitting across from him. Short black hair, wearing dark sunglasses and a sleeveless leather jacket, the man smiles at her. His hands are covered in spiked black leather gloves.

“Come on,” he says to his comrade in Spanish. “*She’s kind of hot.*”

“*She doesn’t look anything like the woman we are looking for,*” he replies in Spanish, adjusting the collar of his polo shirt. He seems a little bit shy.

Both of them speak with an accent that Farea has not heard before.

“*Maybe, but you need to get out there you know...*”

Farea heads towards their table, and both of them stop speaking

“Hey!” The dark hair man says in English with a slight latino accent. “What brings you...?”

“*Cut the crap,*” she replies in Spanish. Both of them look at each other. Farea understands that it is not every day one hears a non-looking latina speaking in Spanish.

“*Ah... What a surprise,*” says the black haired man. “*You speak Spanish.*”

“*What do you think I am doing now, you idiot?*” She can hear how different her accent is from theirs.

“*Oh, my! A mainland Spaniard!*” he replies with joy. Between spanish speakers, it is very easy to distinguish the Spanish accent from those of other spanish speaking countries. “*Andres, you should be happy.*”

Andres does not look at her. She can feel his shyness coming through.

“*Why should he be happy?*” Farea inquires.

“*He likes Spanish girls. There was this chick once...*”

¹⁰ (Richardson 2008)

¹¹ (Jackson, et al. 2001)

“*Hernan.*” Andres acts it out cool and closes his hand around a cup filled with beer. “*Just shut up.*” He drinks.

“*Well... Technically I am not Spanish,*” Farea states honestly.

“*Oh... So where are you from?*”

The billion-dollar question. She folds her arms across her chest, taking her time to pick an appropriate answer. After living in so many different countries, this question has become her nightmare. Most people just have a single, concise answer. For her, it has always been too difficult to narrow down.

“*I’ve lived in many places,*” she begins.

“*Can’t you just give a straight up answer?*” Hernan asks her.

Farea meets his expectant gaze and narrows her eyes. “*Does it matter where I am from?*”

“*Yes,*” he answers bluntly.

She pauses and taps the table with her fingers. In one of the many places she has lived, she encountered another person like her. A little bit older, but who could not identify herself with one country or one culture. Every time she was asked this question, she would reply the same way:

“*I am who I am right now.*” Farea can hear her voice speaking in her head. “*We can figure out the details later.*”

Disappointed, the black-haired man chugs down his remaining beer. Andres, on the other hand, takes a couple of smaller gulps. Neither of them speak, allowing the murmurs of other conversations to take over the atmosphere between them. Farea looks at her wrist-watch. Only ten minutes have passed.

“*That’s an interesting answer,*” Andres offers in attempt to break the awkward silence.

“*How about you, where are you guys from?*” Farea asks.

“*We are from Florida,*” Hernan says. “*Our families, although of different backgrounds, have settled there, and we live near Melbourne.*”

“*From Florida? Why bother coming to northern America?*”

“*We are looking for a woman.*”

“*Anything that I can help with?*”

Hernan reaches for his inner pockets and takes out a small photograph. Slightly discolored along the edges, it shows a woman standing in front of a hospital. Long brown-hair, skinny and tall. Farea immediately recognizes her friend Arine.

“*I know her,*” she says, handing back the picture.

Hernan and Andres look at each other briefly then turn their heads towards her at the exact same time.

“*Wait, what? Where can we find her?*” Hernan asks feverously.

“*Before I answer, why are you looking for her?*”

Both of them remain silent, staring blankly at their mugs.

“*She’s been away for too long.*”

“*Oh, so she is a relative?*” Farea presses.

“*Not a relative. She was part of our small group of Latinos back in Florida.*”

“Was?”

“She left with her friend after her father was killed... Going on two years since we last saw her.”

This is new to Farea. She remembers Alba, but she never knew that Arine understood Spanish; the woman has never had an accent when talking in English.

“Two years? That’s a long time,” Farea comments.

“We don’t know why. But we miss her, and we want her home.”

Silence takes over the conversation. Farea looks over at her empty stool. Her cider mug is still sitting on the counter. A small water droplet falls by the rim, as she stares at it, making her feel thirsty. She gets up.

“I can tell you where to find her,” she says, as she walks towards her seat at the counter.

She hears some mumbling from their part. Not caring to listen now, she sits down and wraps her fingers around her mug. Squeezing it with both hands, she feels the slight coldness of the cider. She caresses the drink with the tips of her fingers and stares at the pulp swimming around in the fluid, mulling over the billion-dollar question all the while. To her, it is more than a simple question. It is an enigma that she has spent most of life trying and, sadly, failing to solve. She looks at people every single day; she interacts with them, and almost everyone she meets seems to know their answer to it.

‘Life is a journey,’ she thinks. ‘To where? The answer will take me a lifetime to find out.’

Farea takes a small sip of her cider, breathing in deeply, allowing the aroma to flood her senses and permeate her mind.

“Hey!” says Hernan, as he takes a seat next to her. “So, where can we find Arine?”

He looks at the bartender and signals him with a V-shape from his fingers. Looking at him from the side, Farea can see a small straight white scar on his brown cheek. Probably a couple of years old, possibly caused by a broken glass.

“Hmmm...” She takes a sip of her juice. “If you want to find her, you just need to...”

Suddenly, the door of the bar slams open. Farea turns around. Looming between the doorframe is a tall man wearing a blue shirt with a white frilled cravat. Covered in a black vest, his belt, buckled high above his waistline, holds a pair of black breeches up tight.

“There they are!” the man says, as he adjusts his vest with two wide hands covered in brown gloves.

He walks straight towards Farea, boots making a clinking sound, as he struts like an outdated old-money gentleman. Two other men, both wearing a white shirts and trousers, follow right behind him like a wake behind a boat. Arms behind their backs, both are glowering at each member of the bar in turn. The tall man halts in front of Farea.

“My dear,” he says while kneeling down. “Are these two men bothering you?”

Farea looks at him sideways. The strong scent of his spiky black hair makes her uncomfortable. Not quite sure what to do, she waits a couple of seconds, contemplating a range of different responses before she settles on one.

“Not really...” she says, as she turns around, facing her cider again. “Rather, they are quite delightful.”

She takes a sip and hears the man stand up.

“I’m sorry that this has to happen in front of you.”

Confused, she whirls around. The man takes Hernan by his shirt and pulls him down from the stool. Hernan falls hard on his right shoulder and puts his hand out to alleviate the pain. The intruder steps on his chest and brings a small revolver out of his left pocket.

“Why... Isn’t that my little friend Fernando?”

Confused, Hernan gapes up at the man.

“You’ve got me mistaken, sir...” he says, panting. “I’m not Fernando!”

“My eyes never fool me; I can tell when...”

“He’s telling the truth,” Andres interjects. “His name is...”

As Andres begins to mumble Hernan’s name, one of the guards storms over to him and punches him in the jaw, hard, and he topples off his stool.

“Urgh...” he grunts, colliding with the floor.

“Don’t interrupt Master Bowen,” the guard snaps, as he forces Andres to stand up.

“Thank you, Jerry,” Bowen says, as he looks down at Hernan. “As I was saying, you and your rotten little cronies owe me a lot.”

“I really don’t know what you are talking about,” Hernan says honestly. “The lady can...”

“Using leverage I see.” Bowen arms his revolver with his right thumb.

The sound of the spring contracting makes Hernan react. Fearing for his life, he starts thrashing, trying to free himself. A little bit peeved, Bowen presses down with his foot even harder.

“You will never learn, will you...” He points the revolver at Hernan’s head. “You were banned from this town.”

“I swear, sir,” Hernan panics. “I... You are confusing me for another person.”

“You will never learn... Even after what we did to you when you raped my sister... You are one reckless mother fucker. But are you any more than a coward when facing death?”

He locks his glower to Hernan’s terrified gaze. Farea looks at Bowen. His eyes, dark brown, are full of hatred and anger. She can feel a mix of fear and confusion churning throughout the room. The bar is quiet; not even a termite in the floor boards would dare to make a step now. She can hear Hernan breathing rapidly beneath Bowen’s foot. Sweat comes out of his forehead, dripping into his black hair.

She needs to act.

“If I may,” she says, as she stands up. “He isn’t ‘Fernando’. Just another voyager who might look like him.”

Bowen does not move.

“Are you sure he is the man he claims to be?” he scoffs at her.

“Positive,” she says, as she stands in front of Bowen. “He came up from Florida to meet his sister. You know, you can’t just stereotype people like that. Everyone is different.”

Bowen slightly looks up. He sighs, disgusted by her efforts. Then he fires. The gunshot resonates through the bar, amplifying the startled silence until it is deafening. Stunned, Farea gapes at the smoke coming out of the barrel. Fearing for the worst, she looks down. Hernan drops his jaw open and stares at the bullet hole next to him... Barely missed his ear. He looks back up.

“Get out...” Bowen growls, as he sits down on the counter. “Now... Get out. Both of you!”

Hernan and Andres get up immediately and begin to scramble towards the door. Then both of them, supporting one another as they stride through the bar, turn around.

“Hey,” Hernan asks Farea in Spanish. “*Where can we...?*”

“I SAID GET OUT!” Bowen roars, as he shoots the ceiling.

Scared, both of them hurry out the front door, disappearing in the shadows of the night.

. . . .

“And there you have it,” Bowen says, as he stirs his iced whiskey. “That is why I hate Fernando.”

Farea never asked him to sit next to her and start telling such a long and lackluster story. She looks at her watch. Still thirty-five minutes before the meeting. She stares straight ahead and takes a sip of the Irish Cream Bowen brought from gods know where.

“Hmmm...” she says without caring. She rests her head on her hand and frowns at her mug. It is empty, since she finished her cider back when he had started speaking.

Bowen drinks his remaining whiskey and looks at his boys. Sitting at the far table, they are playing cards. As the game goes on, one of them screams “YES!” while the other just grunts with displeasure.

“So... You came all the way from Wachusett just to track down this guy?” she asks, feigning interest just to kill time.

“Pretty much.” He takes his glass and swirls it around. The clinking sound of the ice cubes crashing into each other gives her small goosebumps. “He and his rotten little cronies keep reappearing.” He shakes his head in exasperation. “Would have killed the one and tortured the other to find out where the rest of them are hiding.”

“My father would disagree on forcing confession like that,” she states.

He looks at her, his dark brown eyes full of charm.

“And why would he think that?”

She rolls her eyes.

“Because he respects people, and maybe because he knows twisted men like you torture for fun?” she says with a daring look.

Bowen chuckles. Readjusting his neck frill, he sits straight and crosses his legs.

“And what’s with the ridiculous outfit anyways?” Farea scoffs.

He cleans his shoulders with his gloved-hands. “I control many lands. I am a Sir, as you can tell. I provide protection for those who need.”

“So basically modern chivalry,” she states.

He chuckles darkly. “‘Chivalry’ is dead, and ‘modern chivalry’ never even existed. My grandparents owned a small chicken farm. They worked day after day, as hard as they could, because that chicken farm never provided quite enough money¹². Between all those toxins they were asked to put in their bodies, they were lucky they lived long enough to not live under loans.”

“Small farm? So only a couple of square feet?” Farea asks.

“Let me finish. As more people left for the city, more farms were left unused. So my grandparents started expanding their farms. Both of my parents were sons of farmers. Now I own a lot of lands and let a lot of other people work on them.”

“So you’re slaving people?”

“I would say merely tapping the potential of the most wasted resource on Earth.”

She rolls her eyes and looks at her watch again. Only three minutes have passed.

‘So boring...’

She gets up and reaches under her stool, where she has stowed her blue hoodie. Farea puts it on, more than ready to get out of this bar. She dons her cap and starts walking towards the door. Immediately, Bowen’s boys spring from their seats and block her in.

“What’s the matter, young lady?” one of them asks. “Need to go somewhere?”

She raises her head, meeting the daring looks of the two guards.

“I’ve got a meeting to attend. Now, if you would excuse me...”

“Boss hasn’t given you permission to leave. Now, please take a seat next to him.”

She looks at the ceiling, not believing what she is hearing.

“Nonsense. I’m a free woman.”

“Wrong,” says Bowen. “I own this bar, so as long as you are in it I can require you to abide by my rules. Rule number one, the only people who can leave are the people who are authorized to leave.”

She turns around and walks furiously towards him.

“Are you out of your mind?” she says angrily. “I don’t have time for games.”

“Neither do I.” He bites a piece of ice, and the crunch makes her cringe. “So, are we on for tonight?”

“What are you talking about?” Farea asks. “You are in my way from my meeting.”

“No matter.” He pulls out a nail clipper and starts scrubbing his nails. “My decision has already been made. You shall be mine for the night.”

She looks around. No one is paying attention to her. They are all drinking, talking quietly.

“You want a game?” She pulls out a ball from her pocket. “I’ll give you one.”

Bowen looks at her and smirks.

“Nice try,” he turns slightly, enough for his hand to reach his glass, “but I would rather you just sit and wait for me to finish my ice.”

Farea looks at her watch. Twenty minutes before the meeting. Taking into account walking distance, she only has ten minutes left to kill. And she does not want to be late.

¹² (USDA 2016)

“I’ll make it more interesting,” she says, bouncing the ball in her hand. “If you win, you may have me whenever you please.”

Bowen gets on his feet and stands in front of her.

“And what is in it for you?” he asks.

“I win, I get out the door,” she replies with determination. She remembers how so many other men like him have taken one glance at her and just assumed she was an easy target. Little did they know, she is a first-dan judo. Confident in herself, she shows him the ball. It is a small red stress ball she got as a gift from a little girl. She does not exactly remember how or why, but the ball has come to represent what she likes: Respect.

“Alright then.” He puts down his glass and rolls his sleeves up. “What is the game?”

“Catch the ball in...” she looks at her watch, “five minutes.”

Immediately, Bowen extends his arm, nearly touching the ball. Surprised, Farea tucks down and somersaults backwards. She is lucky she does not hit anyone in the process.

“A female ninja,” she hears Bowen say. Next to her, men are starting to vacate their seats, trying to get as far from the battle as possible. Bowen slowly walks towards her, giving her enough time to figure out her next moves. Unexpectedly, he takes out his revolver and shoots. It misses her right arm by less than an inch.

“There goes my last bullet,” he grunts, returning the gun to his inner pocket. He looks at Farea and asks for a pause.

“Mind?” He points at his untied black boots.

She does not really care. As long as she can make it out of here in under five minutes, she will be fine. Anything to kill time will help.

Bowen reties his black boots. Then he brushed his fingers along one of the soles and pulls out a small knife. The light of the bar reflects on the blade, illuminating a liquid dripping from its tip.

“You like playing dirty,” she says while keeping her distance.

“I would say playing to win,” he says, as he grins at his blade. “Ah... It has been quite a while since I last used this. I should be careful; Rophynol¹³ is quite strong.”

‘That compound...’ She remembers her mom telling her bad things about it.

Immediately, Bowen springs forward and goes for her arm. The blade nearly brushes her shoulder, as she ducks away from it, dodging the tip by less than an inch. At the same time, she elbows him in his side. Then Farea looks up and meets Bowen’s mocking expression.

“You little pest,” he says, as he starts stabbing at the air. She keeps her distance, waiting for an opportunity to strike. After a brief moment, she notices his feet are slightly unbalanced to his right. She takes advantage of it and starts hovering towards his left side. She looks him up and down, keeping an eye on his torso movement. He keeps his distance, dancing around for a little while longer. Then he stops stabbing and lowers his blade.

That is when she strikes.

¹³ (Smith, Romanelli and Larive 2002)

Swift in her moves, she ducks to his left and punches his wrist. The blade hits the ground with a violent clatter. Quivering with rage, Bowen lunges, attempting to grab her with his massive hands.

Another mistake.

Recalling her judo training, she brings her hip next to his. *'Always use his momentum,'* she hears her master say. Lifting her foot very slightly off the ground, she forces him to slide down her leg. He hits the ground hard, landing incorrectly on his shoulder, and she hears the joint snap out of place.

“ARRRG!” Bowen grunts.

She steps away from him and looks at her watch. Two more minutes left on the timer. She crouches, grasping his dislocated shoulder. He twitches in pain.

“Well... Beaten by a girl,” she gloats.

He meets her gaze and tries to shake her off. Farea does not like to be taken easy. She digs her other hand into his ankle, right on top of the joint between the tibia and the fibula. She knows the pain of broken legs, and she knows how to break legs.

'Maybe too excessive for a punishment...' she thinks.

She glances around and spots the blade just a few inches away. She pulls it closer with her foot, grips it carefully, and slashes his ankle.

“Sweet dreams!” she says.

Farea stands and nods at the bartender. He reciprocates.

Then she strides towards the door. As she leaves, she glances back at her hapless victim and his helpless posse. Bowen's boys are trying in vain to help him up, but between the dislocated shoulder and the Rophynol he might as well be nailed to the floor. In another ten minutes, he will be too deep in his own subconscious to even leave his bar.

Sweet dreams... Sweet dreams...

[EARTH;; Onslaught]

“Athie,” Mollie sighs, gesturing toward the driver side door and collapsing upon the back seat. “You drive.”

Athie stifles another yawn and nods, as her calloused fingers tuck a stray red curl behind her ear and shield her freckled pink face from a setting scarlet sun. “Okay,” she mumbles, stretching her long arms over her head before shaking out her slender legs. She rubs a final remnant of sleepiness out of her eyes and jogs around the front end of Helga towards the open driver side door.

Mollie drapes her long silver braid over her shoulder and closes her bleary eyes. “Thank-you.”

“To KSC?” Athie quizzes.

Mollie grins. “To KSC.”

She hears her daughter shut the driver side door and restart the hydrogen-powered electric motor. Then she loses herself in a sort of dream...

The sun is a brilliant yellow, and the sky is a cloudless, crystalline blue—a welcome contrast to the rubbish-ridden grey sand and the raging brown Mississippi River beyond. She and her nine-year-old girl have just finished eating their sole meal of the day—boiled potatoes and (she almost gags at the thought of it) fish. She directs Athie to pack their pot and griddle back into Helga’s trunk, as she extinguishes their cooking fire and begins to clear all traces of their pit-stop from the river bank.

The bullets come of nowhere; the explosive sounds of their rapid-fire blast-offs out of guns serve as her sole warning of imminent danger.

“Athie—Get in!” she shrieks, and her daughter obeys without so much as a heartbeat of hesitation. Then she herself sprints towards Helga, as sand flies up around her ankles, and bullets pelt the windows and doors of their supervan, shattering glass and plastic and carbon fiber alike. Athie, though frightened to tears, slams the trunk shut behind her then clambers through the supervan to the driver side door and swings it open.

The she sees them—Ignorants—the same misinformed and merciless savages who had murdered her husband and forced her and her daughter to flee from their home—their friends—their happiness—and fight a desperate, dire, never-ending battle just to survive. A small army of men and women dressed in tattered remains of faded green and brown camouflage uniforms appears in her rearview eyepiece, all of them spilling out of the reeds on either side of the river and charging across the sand like ash and molten lava from an active volcano, each of their massive guns trained on their two scrambling targets and firing non-stop.

She watches Athie curl up on the driver seat and punch the ignition button, and she hears the motor whir to life.

Then she gasps, collapsing into a heap upon the sand. Her pale grey cargo pants begin to darken with a glistening crimson just above the back of her left knee, and her face crumples in

pain, as a petrified whimper slips through her lips. Then something—maybe the shout from their enemies' leader, maybe the bullet crashing through the window of the driver side door, maybe the flicker of dogged hope deep in her daughter's terrified eyes—compels her to pull herself back to her feet.

Mollie feels her eyelids flutter open. Her pulse is racing, and her palms are sweating, and her left knee almost seems to be throbbing again. The rest of the attack had been a blur. But here she is, fourteen years later, reclined across the back seat of Helga, still very much alive and well, her daughter, clutching the steering wheel once again, staring out at the desolate remains of I-95.

[Mars;; 1]

SUBJECT = Andrew Vancoss; ID = AV63900;

The sky he sees above him is so clear... he imagines he could drink from it deeply like a fountain. I guess he must be due for another water ration soon, because thoughts of slurping up the sky are pretty unusual for him. All around him trees stretch up towards the sun with wide oval leaves that seem to rustle and flap in the breeze. The leaves seem to be tinged a greyish blue, like the ocean, and the trunks remind him of palm trees.

Yeah, he's definitely due soon; his hydration indicator just turned red.

The act of moving his feet, one foot in front of the other, is soothing somehow, relaxing—it feels like as long as he keeps moving one foot in front of the other, nothing is wrong. As long as he follows his instincts. As long as he listens to his senses.

I believe the human action of walking has been linked to a calmer disposition, though Andrew doesn't seem to be conscious of it at present.

He hears a pinging noise. It seems so distant. Andrew can't seem to remember what it means, even though he's heard it a few hundred times before. He's pretty sure it's something important, yet he can't put a finger on it. I almost wish I knew how to give him a hint.

Out of the corner of his eye, he sees what looks like a general map of the area.

And just like that, it's gone.

In the next moment, Andrew's connection to the game server stops.

His minimap is the first thing to go out, and then his avatar stops responding to his commands. The whole process feels like waking up from a particularly deep sleep mode and finding that your arms and legs are completely unresponsive. He experiences a feeling of acute panic before he actually wakes from the simulator with all of his extremities asleep and the distinct feeling that he's almost died.

He removes the connecting headgear.

'Note to self: Make the logoff process smoother,' he thinks.

He lies there for several moments, making indistinct noises and twitching his muscles to get everything inside of him to wake up, instead of just slumping there, unmoving, like wet concrete. After some time passes, he is able to finally move his arm to his face in an attempt to rub his eyes. Instead of rubbing anything at all, his arm—which probably feels more like a rubber chicken than a human extremity—slaps against his face. The sound echoes around him in a way that makes his ears turn hot and red. If anyone else had been around to see or hear it, then he would have started stammering about how he is totally so much cooler than this.

“Ow,” he mutters softly, letting out a long exhale. He drags his unresponsive hand down his face and rests it on his chest, lying there a while longer, waiting for the rest of his body to wake up.

Humans, I have noted, tend to undergo a very slow transition from low power mode to active mode.

Eventually, Andrew gets fed up with just waiting for his body to resume function and clumsily undoes the clasps that keep him from falling out of his bed and hurting himself while he sleeps. He gropes for the handhold on the wall nearby. It takes more time than he would ever be willing to admit for his hand to actually close around the metal bar.

The sensation of holding something while his nerves aren't exactly up to "feeling" anything sends an uncomfortable pulse up his arm.

"Come on, arm," he mutters to himself, tensing his arm to help guide his body out of his living quarters. "Work with me here." He's been in space for a while, so he's used to being light and bouncy, but few sensations are quite as odd as feeling sluggish and being lighter than air. This is what he gets for strapping himself down as tightly as he does, but I know the last thing he wants to do is to have a weird dream, roll over, and wake up on the floor.

Once he's out of his quarters, he squints and looks around. He quietly wonders where he is supposed to be going. In his groggy state, he seems to have forgotten the finer details of the settlement he begrudgingly calls home. The Martian wind blows softly outside¹⁴. The man stands there for a while, listening, wandering into the depths of the neural network within mind. After taking a final moment to think, he takes off in the direction of the main terminal.

The terminal is a large computerized machine installed directly into a wall in the belly of the settlement, above the sector in which plants are grown. Its three monitors seem to be pushed away from the wall, although, in reality, the graphene screens are formed into it and look weightless¹⁵. Sometimes just seeing them is enough to make him yearn to just stick his fingers through one, like how a child might want to jam its fingers into a bowl of recently-cooled NutriGel. Thank goodness the man is a professional who would never actually do such a thing. Except for that one time. Just that one time though.

I guess he didn't notice me watching.

As Andrew approaches the screen, he watches it flicker slightly in the dim room. To be honest, it's fairly dim everywhere. Harsh, bright lighting is a drain on their power supply, and no one seems to find it particularly necessary. A lot of the people on the settlement have been here for at least four years; most have been here longer. At this point, all of them can navigate the dim hallways without a problem.

"Doesn't make this place less creepy, though..." he grumbles under his breath.

Andrew shakes his arms and legs as best he can in the weaker gravity of Mars then moves towards the chair. His arms and legs haven't fully recovered yet, but he's pretty sure his fingers will be up and running after a few minutes of intense coding.

"I've always wanted to try coding by slapping my hand against the keyplane," he says to what he believes to be an empty room. He settles himself into the chair and straps himself down to prevent himself from pushing away from the terminal. When the man gets frustrated with

¹⁴ (M. n.d.)

¹⁵ (Anthony 2014)

cleaning up everyone else's bad code and ends up slamming his hands on the terminal's soft blue keyplane (which is made of the same material as the screens), I know he doesn't want to end up in the air, having to let Mars gravity pull him back down.

Once he settles in, still bouncing his legs to keep them from completely falling asleep again, he is greeted with the notes and the changelog of the person who had been monitoring the game before him.

Despite the fact that he's pretty sure he will have to go back and change a bunch of things, he at least wants to know what his predecessor had been trying to accomplish.

14FJ20273: UPDATED RESOURCE CACHE.

17FJ20273: SHUT DOWN IN SECTOR 4. ANIKKA HAS GONE TO FIX IT. KEEP IN CONTACT, AV63900.

19FJ20273: OXYGEN FUELERS BACK ONLINE. PREPARING TO RETIRE BACK INTO THE GAME.

21FJ20273: AV63900 LOGOFF PROCEDURE STARTED. RETIRING INTO THE GAME.

23FJ20273: HANDED TERMINAL OVER TO AV63900.

His fingers glide across the keyplane robotically, as he feeds his credentials into the computer and confirms his identity as AV63900. Automatically, the computer sends a message to all the other terminals, alerting everyone who isn't plugged in that he's the one taking over for Fionna.

I find him muttering messages to all of his comrades who are awake and working at that time, each one individualized and filled with charm and his—if he does say so himself—electrifying personality. “Dear Evan—I'm online now so you can stop hitting the keyplane and making more problems than you fix,” is the first one that comes to his mind, but he thinks it seems too cruel. Even if Evan's lack of a single idea of how games work means that he ends up causing about three times as many problems as he ever fixes, at least he tries. Andrew laments that his life is basically the clean-up-after-Evan show, which, if it were being shown on the TEV, he would have turned off in a second.

Wait. Where is he going with this?

He sits in silence for a good five minutes before he remembers what he's been awakened for. *‘Oh right,’* he thinks. *‘The Simulation.’*

I'm glad he's finally starting to figuring things out.

Andrew swipes over to the messages sent by their technician and reads through them slowly, his eyes constantly flicking over to either of the other two screens to make sure everything is still working in-game. There are so many people gathering in the Simulation nowadays, collecting ‘resources’ in an artificial reality while their real bodies lie motionless in beds to consume as little energy as possible. In a situation where they have to make people pretend to gather resources so

they don't feel entirely useless all the time, the last thing they need is people taking up too many actual resources by breathing too much or sweating a lot and begging for water and food.

He rubs his forehead and types a response to Anikka.

28AV63900: ANIKKA, THIS IS ANDREW CONNECTING. RESPOND IF EVERYTHING IS OKAY ON YOUR END.

Andrew leans back and yawns, stretching his arms above his head. He glances outside and can tell by the rolling dust clouds that he must have been in the game for at least a week. He supposes whoever was on water duty remembered to give him two rations—one every 69.542 hours, although he rounds up to 72—because he isn't too dehydrated to function. He tries to pretend he isn't hungry.

Anikka isn't responding, and to a degree that worries him. Then again, he's only just sent it; even if he'd sent it hours ago, he wouldn't hold his breath for a response, because she isn't a big communicator—unless she needs someone for something. Yet he admits to being fond of the woman.

He glances back to the system and settles into his chair.

Typing quickly, he compares the information in his comrades' feeds to the information outputted from the diagnostics. He has a lot of data he doesn't need, and occasionally a variable spits complete garbage at him—random strings of numbers and letters from who knows where.

He puts his face in his hands.

Down the list of errors, he goes, until he comes across a problem apparently caused by an issue he's never encountered before. He thinks, his finger rhythmically tapping caps lock for a few minutes. Then he types up something that seems to fix the issue and moves on. After all, a quick fix is still a fix.

But the whole idea of quickly patching something and then just leaving it by the wayside still makes my chassis crawl.

He clicks over to communications. There's still no sign of an update from Anikka, but updates from other people on the settlement who, like him, are awake to keep the place running now fill his screen. Many of them are just automatic messages from various consoles throughout the settlement, meant to alert their brethren that one human has shifted duties with another human.

But a few of them are actual communications, which Andrew reads, just to give his mind a break.

39CK03600: ATTEMPTED STARING CONTEST WITH DUST CLOUDS OUTSIDE.
CURRENT WIN/LOSS: 0/236

“Pfff!”

He decides to respond, after he stops laughing:

41AV63900: KEEP TRYING KIRKPATRICK. THEY SAY 237TH TIME'S THE CHARM.

I doubt his efforts are ever going to result in a victory, but, like Andrew, I'm willing to cheer for him anyway.

Reading down the history shows incoming and outgoing messages of his and other terminals. Some are amiable conversations between workers to stave off the loneliness of working in the dark and quiet with only the thin sound of Martian wind for comfort, while some are purely business, and others are just... strange, but uniquely amusing to him in a morbid way.

One reads, "In case of microbe uprising terminate immediately."

And after reading that Andrew can't stop himself from laughing so hard that he snorts.

Yet as he keeps scrolling lower and lower, teleporting himself further and further into the past, to better days, he can feel a heaviness weighing on his shoulders and in the pit of his stomach. The message announcing the release of the repurposed training simulation, once a tool their spacecraft had been outfitted with to make sure their skills remained sharp during their seven-month journey from Earth to Mars, now a trick to keep them lying still and consuming as little of everything as possible so they all could live a while longer. Their desperate pleas for aid from Earth back before then, as their power supplies were damaged by meteors and the more-corrosive-than-anyone-ever-expected salt blowing across the Red Planet and even the strange Martian microbes some of them had been sent here to research¹⁶. But they think they know, as much as they can know since losing contact with the rest of civilization, about the current state of Earth and of the company that sent them all up here in the name of science.

And they, as men and women of science, have no illusions of beauty or Elysium suddenly coming about since then. Is there even a society left behind on Earth? Is there anything still there that reminds them of home? Reminds them of their choice to leave their loved ones forever and come up here to this unfamiliar and unkind place, made of swirling dust and corrosive salts, with years longer than any of them had ever actually wanted to experience?

These questions haunt the man, and there is nothing he or I can do to answer them.

Andrew lets out a long exhale and almost starts to slide out of his chair. He rests a hand on his stomach, both uncomfortably thin from such a long time of being forced to regulate his intake in effort to preserve the settlement's dwindling supply of food. When I first met him, I admit I thought he was pretty chubby for an astronaut. Now he looks like a sallow, unhealthy mess. He can't confirm it himself though, aside from the reflections he sometimes catches in the metal panels... Those mirages scare him.

The message "46RL90566: CLEANING REMAINING SOLAR PANELS" comes suddenly.

Subconsciously, he taps something, and the screen changes.

50CK03600: RACHEL, GROWING MICROBIAL STATUS?

¹⁶ (Fox-Skelly 2015)

52RL90566: THEY'VE COVERED IT COMPLETELY. NOT SURE WHAT TO DO ABOUT THEM. FOCUSING ON DUST.

55CK03600: KEEP POSTED ON MICROBIAL UPRISING.

58RL90566: UNDERSTOOD.

58RL90566: THOSE MICROBES WON'T BE RISING ON MY WATCH.

The man is almost entertained.

If only the solar panels were actually covered with microbes—living organisms that could be poisoned and killed and made never to return. He imagines they are really just caked with chloride salts and enough new evidence of corrosion to make them look like petri dishes for Martian bacteria¹⁷. Pity. Because the salt can't be made to go away.

To be honest, it can be dealt with, but without the necessary tools, it might as well be considered impossible.

Andrew shakes his head and moves on to a more important task.

It has become a ritual of his, one that he is always scolded for, but one that he repeats nonetheless. He clears his throat a couple times before leaning a bit closer to the terminal.

“This is Andrew Vancoss, number sixty-three from Marian Settlement 4K-9G9. Requesting emergency aid. Repeat. Andrew Vancoss transmitting from 4K-9G9, requesting aid.”

It's quite possible he's memorized his little spiel even better than his IDN at this point.

He taps an icon, watching as the terminal seems to think for a moment, almost questioning his command, and then his message is shot into space towards Earth.

He rubs his forehead, as he closes his eyes. Feeling something icy on the back of his neck, his lips quirk into a smile.

“Why are your hands always freezing, Anikka?”

SUBJECT = Anikka [Unknown Last Name]; ID = AN40323;

He leans back and looks at the woman standing behind him. All he can really see in the dimness of the room are two catlike eyes and a face as round as a moon. Her hair is strewn about her face in a tangled halo, but we're both under the impression that even if everyone up here had access to all the resources they could ever want, her hair would still be tossed about her head as if she'd just woken up that way.

Water is too precious to them to be used for cleaning, and I'm sure it'll continue to be regarded as such until the other water treatment and purification system can be resurrected from the machine graveyard.

Just thinking about it makes him yearn for a cup of coffee and a hot shower.

Anikka is quiet, but, then again, she is always quiet.

Her eyebrows quirk, as she leans in to look at the console and diagnostic screen. The color of the screen-light playing across her face brings attention to the scar on her neck, pale and jagged.

¹⁷ Ibid

Andrew never knows what goes on inside her head. He's worked with her for years and is no closer to understanding her now than he was the day he first set foot on the settlement. Sometimes he wonders if he really wants to know.

It's always the quiet ones, after all, and it's partially for that reason that he'd befriended her. If she decided to go crazy like everyone whispers she's bound to, then he would bank on their rocky but tangible friendship as his ultimate defense against her raising a wrench and braining him against the console.

Sometimes I want to tell him what I know, but in the end I always decide to leave him in the dark. His present thoughts about her are too entertaining for me to change.

Anikka points to a sector that is greyed out and looks at him questioningly.

"What?"

She points more insistently, almost jabbing the thin screen.

"Hey, careful," he mutters, grasping her wrist lightly. Then Andrew leans in to get a better look at what has caught her attention. Generally, greyed out sectors indicate something going wrong, yet the diagnostic doesn't seem to be telling him anything other than the fact that something isn't acting correctly.

He frowns at the screen, silently lamenting his human brain's unfortunate inability to understanding the error.

"That's the plant sector," Andrew says. He doesn't have to look over to Anikka to tell that she finds that incredibly unhelpful. He decides to clarify a little. "I can't tell what's wrong. The terminal isn't exactly being crystal clear right now."

The face she makes at him causes Andrew to let out a sound between snort and laugh. He pushes her hand out of the way so she won't poke the screen and sets about figuring out what's wrong. *Honestly, doesn't she know better than to touch the screen?* He supposes she works with enough mechanical objects and robotic parts that she ought to know that putting her fingers directly on certain things is a bad idea. In her defense, touching a graphene screen isn't as serious as touching an ungrounded wire.

It seems as though the digital clicking sounds the terminal has been making as he types aren't enough for her, so she swats his hands out of the way. One of her hands clutches the arm of the chair while the other hand taps away at the keyplane with surprising diligence.

Being able to type with one hand is just something she's had to learn while fixing things around the settlement; sometimes she needs her other hand to hold up a flashlight.

Screens move by quickly. Andrew's head hurts, as he tries to read the rapidly passing images and information before Anikka points to something. According to the data on the other end of her finger (after he reads it three times, and then once more because he still isn't totally sure he read it right the first three times), the greyed out sector is suffering intermittent losses of power, even though the generators are fully back online. There seems to be a noticeable difference in how well it should be running and how well it actually is running.

When he turns to her she looks smug but also somewhat concerned.

He has nothing to defend himself with. Somehow he doubts his negligence will cause all of their remaining plants to die—if a couple hours offline were enough to make everything in their greenhouse units die, then none of it ever would have survived the dark trip to the settlement in the first place—but the idea that he might have gone his entire rotation without ever noticing that the sector was offline fills him with a guilty dread. He can't believe he hadn't noticed it going down. He likes to think he's a bit more attentive than that, even though he's made mistakes in the past.

Anikka tilts her head, concern clear.

"I'm fine," Andrew says, giving Anikka a half smile. "Go show that sector who's boss."

She pats him on the shoulder and makes her way out of the room towards the plant sector. He puts his head in his hands and looks at the screen. Giving his cheeks a pinch to wake himself up—because that kind of negligence, though common amongst humans, is unacceptable—he hunches back over his work.

When the terminal beeps, Andrew almost falls out of his chair in shock. Apparently, it is just the game, calling attention to another error that it keeps running into. There aren't any huge errors in the game, at least not anymore, so it's probably something else to do with making a small optimization and accounting for a change in the terrain. Not that any of his efforts to improve the Simulation benefit them, not really.

But everyone on the settlement was born on Earth, so there is a certain pleasure they all tangibly feel in pretending to walk on a planet that has Earth's topography, even if Earth itself is hidden behind holographic lies and the victorious sound of picking up yet another 'resource' that means nothing.

'If only we could prescribe meaning to them,' Andrew thinks. *'Then...'*

The man pushes the thought out of his head and throws himself back into his work. He types almost without thinking, only looking at the console to remind himself what he is supposed to be fixing, occasionally flicking his eyes over to the changelogs to record what he has been repairing, removing, moving, or improving. *'It's all about optimization,'* he thinks to himself. Everything has to run while taking up as few actual resources as possible. What they have on hand has to last them as long as it can.

For the mission. For science.

The thought brings back memories of his dad and *his* silly goatee, and he finds himself grinning up at a great man in a suit jacket that looks like a lab coat, as *he* stands on their porch, saying, in a deep voice, "Foooooor Science!" as he points to the sky.

Andrew can't remember the sky being anything other than a reddish haze, almost always clear aside from rolling dust clouds when it's dust season.

But, then again, when isn't it dust season?

"Foooooor Science..." the man whispers to himself, mimicking that familiar voice. Somehow it makes him homesick and disgusted at the same time. Yet the sound of that good-old phrase fills him with a determination he hasn't felt in a long while. If he closes his eyes and thinks really hard, then he can remember the one floorboard in his bedroom that would always creak no

matter what he put there to soften the sound, and the buzz of the TEV, always turned to his Aunt's favorite soap opera in the morning and to the Arizona Lottery in the evening.

He remembers how that Cooker always dinged too loudly, how the hot sidewalks were bleached white like sugar.

But now is no time to be closing his eyes, reminiscing about the suburb that might not exist anymore, the house that might not even be standing. Andrew can't keep thinking about the life he's grown away from and the places he's left behind. There are things he needs to do, people he needs to help. They're stranded in space, and, in his mind, they need to spend every waking second focused and ready for anything.

He has too much work to do.

So, in that moment, Andrew purposefully pushes idyllic thoughts of Earth out of his head and returns to tending to their Simulation.

[earth;; Zetius]

Farea leans on the wooden rails of the docks, looking out at the reflection of the crescent moon. It shines brightly, slightly blinding her. The dock, made out of red oak, creaks occasionally, as the waves crash into the pillars below. She closes her eyes. Wind breezing, making her brown hair blow, reminds her of a place she once considered home. The little garden by the lake... Her parents had built a small dock there, and a canoe was always floating next to it. When she was young, she would spend some time on the shore, alone, staring into the distance, asking herself, *'What is home? Is it just an illusion?'*

Now, home is still an illusion.

"Having a fun time?" says a voice somewhere behind her.

Farea looks out of the corners of her eyes. In the distance, about twenty feet away, a familiar figure is walking towards her, hands stuffed in her trousers. Farea still does not hear any footsteps, despite the fact that she knows the soles of the woman's long leather boots are strapped with metal. Farea notices the woman is wearing an oversized marine coat and a dust-covered hat with a small red feather poking out of it, and she sighs. *'Does she have any sense of fashion?'* The woman stands next to her, leaning her back against the rail.

"Early? What's up?"

"Nothing, Arine, just got here early," she says while staring at the horizon. She does not feel like talking.

"Hmm... This is really unusual for you. I mean, come on, aren't you like Spanish or something?"

'Again with the stereotypes.' Farea glares at her with challenging eyes.

"It's a joke, woman, come on! Hmmm..." Arine says while kicking the ground. "Don't mind it, good thing you're here!"

"Why this hat?" Farea asks while pointing at the fedora on Arine's head.

"Oh, this?" Arine removes the hat. "I broke into an abandoned estate on the outskirts of town and found it while I was poking around. Looked cool, so I took it."

Arine inspects it. She starts removing dust with her hands then spins it on her finger. Wearing an open dark-blue marine coat, Arine almost looks like a captain ready to sail. Her long chestnut hair drapes across her shoulders, covering her neck. A small necklace hangs down her chest and disappears beneath a dark blouse. Three buttons are missing, but luckily none of them are successive. Her eyes, focused on the hat, are as dark as a cumulus cloud ready to pour rain.

"What's the meeting about?"

"A small artifact," Arine replies. "I need to retrieve a package."

Farea turns towards her.

"A package?"

"Yes," Arine says, still examining her hat.

Farea looks up at the dark sky and stares at the stars and the planets. "Remember you told me to come here because it was important."

“It is. Order comes from Zetius.”

Zetius. The only person above Arine who Farea knows about.

“What’s so important about a package that Zetius won’t even be here to get himself?”

“Look, I received the order from this,” Arine states, removing a black metallic cylinder from a pocket in her coat, “and I asked you to come here because I recruited you, okay?”

Farea shuts her mouth. She owes Arine. If it were not for her, then she probably would have died, of all places, on Lincoln’s feet.

Farea cannot immediately see where the opening is to the cylinder. After inspecting it with the tips of her fingers, she finds a thin slit and starts to unroll a transparent foil.

“Never seen this kind of paper before,” Farea says aloud.

“It’s not a paper.” Arine shakes her head. “It’s graphene¹⁸. Simple, light.”

Farea finishes unrolling the foil. Suddenly, it lights up between her hands and reveals a black screen.

“There’s nothing here,” Farea observes.

Arine approaches and slides her right pinky along the left-side of the screen. Then a small white dot appears in the middle. She groups her left fingers together above it and slowly expands them. Underneath her fingertips, the white dot expands as well. Eventually, her palm is touching the screen, and a blue background is revealed.

“That’s cool,” Farea exclaims, captivated.

There are three different icons on the screen: a kiosk, a cam recorder, and a phone.

“Phone and Kiosk do not work. Go to Cam Recorder,” Arine says, leaning on the rail and looking towards the horizon.

Farea taps it with her finger, and a lonely file appears. ‘Countdown 1.’

“What’s Countdown 1?”

As soon as she says it, the screen turns red.

“What the...?”

“Hi, Ulyss,” a gruff voice utters from the screen. “I need you to pick up a package. It’s for HQ; they need it immediately. Meet it at nine-thirty-three on the DOCKS.”

Suddenly, an illustration appears. Small vials, all glass.

“Our contacts are bringing thirty vials of di-water. When they hand them over, insert the electrodes into one and crank up the voltage.” Arine shows Farea a small case containing a voltage source and a pair of electrodes. “You’ll know if these people lying or not. Don’t fail me.”

The screen turns black. Farea presses down on the graphene, and it rolls back into a cylinder.

“How will you know if it’s methanol or not?”

Arine shrugs. “Beats me.”

Farea looks at her wristwatch. It is difficult to know the exact date, but Farea can tell it is around 9:25PM. Returning the scroll to Arine, Farea looks towards the horizon again. Several clouds are forming there and seem to be coming closer. The sea is a little bit shaky, too. Farea supposes a storm is approaching.

¹⁸ (Lee, et al. 2014)

She and Arine stand in silence for a while. The air, salty and moist, starts to cool. Farea adjusts her coat and glances behind her. Arine is playing with her hat, whistling a strange melody. Suddenly, the feather slips off and flutters towards the sea.

“Noooooo...” Arine says, her voice wobbly. “My fancy feather...”

Farea chuckles. “Next time, be more careful.”

“There is no next time. No more feathers...” She looks at Farea with a doleful look.

Farea understands how important this meeting is supposed to be, but she lightens the atmosphere with some laughter. She really likes Arine’s company.

Farea looks at the sea once again. The bright moonshine reveals several clumps of foam surfing the waves. She has read books about what causes them to form there: underwater turbines¹⁹. Using the inertia of the water to spin, they generate electricity. ‘*Smart people,*’ she muses. ‘*Too bad those turbines are probably corroded and useless now.*’

The silence starts to feel awkward between them.

“How do you know Zetius?” Farea asks.

“He recruited me a long time ago. He began just like us. Now he’s a Five.”

“Geez, you rate men now?” Farea says, lifting her arms in exasperation.

Arine glances at her, shaking her head. “No, a Five isn’t a rating. He’s one of the most important people of the Sembradores.”

Sembradores, the gang that rules the abyss. That is what people have come to call them. They take over cities within hours, and they rule in the darkness. They are the shadow that lurks in the hideouts of all the biggest gangs left on Earth. Farea is not part of them, but she has become Arine’s protégée.

“How did you find out about the Sembradores?” Farea inquires, remembering the conversation she had with those two men at the bar; she wants to know the whole story behind it.

“You like the short story or the long story?”

Farea shrugs. “Short one, I guess.”

Arine brushes her hair from her face. “In short, someone dear to me died a couple of years ago. I wanted to seek revenge. I joined the Sembradores because they were the most appealing group to me back then.”

‘*Keeping it to herself,*’ Farea thinks. She studies Arine’s face. Impassive.

“That’s funny,” she says aloud. “I talked to several people at the bar today. A guy called Hernan, he said the same thing. Do you know him?”

Arine whirls towards Farea and grabs her hand. She looks at it, her gaze gentle and distant.

“Why was he there?” Arine asks her.

“To look for you. To bring you home.”

Arine takes a moment, staring at Farea’s hand then gingerly letting it go. She turns and leans on the rail.

“Tell him I can’t... Not yet...”

¹⁹ (Cha, Shen and Porfiri 2013)

A moment of silence. Farea leans on the rail, staring at the deep blue color of the moonlit ocean. The clear skies above allow the stars to reflect on the undulating waters. She breathes deeply, listening to the waves, as they crash on the beach, to the wind, as it blows the distant storm clouds closer. It is peaceful and discomforting all at once.

“Have you met every Sembrador?” Farea asks to start up the conversation again.

“No, we are only about ten official Sembradores, with the big Five being the most important ones aside from L.”

L. Farea has never heard of him before.

“Who is L?”

“The creator of the Sembradores.”

Farea takes a small mental note. “Anything special about being a Sembrador, now that you joined?”

“Less violence... I guess...” Arine answers with a sarcastic tone.

Farea, with those simple words, understands immediately. Rape and abuse are the biggest threats to a lone woman. More and more desperate men lurk in the streets, like snakes scouring a field for mice. Farea has been assaulted more than once, but she has always managed to counter the attacks, thanks to her self-defense techniques. *‘I owe you one, sensei,’* she thinks, remembering her beloved mentor, another person she had been forced to leave behind in another place she had almost considered home. However, Farea knows she would never be able to join a gang; despite feeling so bitter towards her years spent on-the-move, she has never liked to be pinned down.

“So you traded freedom for protection?” she inquires.

Arine closes her eyes, holding the charm strung around her neck with a firm grip. It is no ordinary necklace. Sembradores are given special jewelry. To Arine: a small golden charm with the Sembradores’ mark, a raven drawn on a five branch star. Everyone on Earth recognizes the insignia. It repels people, like fire to animals. Farea does not have a burden quite that large to lug around with her, but she understands.

“That’s the price you need to pay,” Arine murmurs.

Farea can only imagine how Arine has been living her life: Barred from everything, even from making bonds. While carrying the sign, Arine could only talk to other Sembradores without being isolated and feared. Farea has met several of her acquaintances on different occasions—Trance, Hun, Karash... She remembers them like she met them yesterday. Most of them are inconsiderate and harsh, but others are very understanding people, like Luze.

“Just to let you know, I will always be there for you, always,” Arine states.

Farea’s heart pounds out of beat. It is a remark she always loves to hear. She smiles and nods.

Suddenly, both of them hear the wood creak, and they turn their heads. Coming up behind them is a small cluster of people.

“The package is here,” Arine says.

“What are you doing here, ladies? An important meeting is happening right now. Get lost.” barks the robust man in the center.

Arine and Farea stand together, leaning on the rail. They are facing sideways from the group. Four people, three men and one girl, stand opposite them on the dock. The middle-age blonde man, about five feet tall, is carrying a small metallic suitcase.

“Is there anything against us being here?” Arine asks them, folding her arms across her chest in a nonchalant yet slightly menacing manner.

“We are not here for jokes. We are here to meet Zetius,” the robust man snaps.

Arine glares back at them. “Zetius isn’t coming; didn’t he say anything to you?”

The men and the girl look at each other. Exchanging a rather unnerving smiles, the men turn their heads back towards Farea and Arine.

“How delightful,” says the third guy, as he and his accomplices swagger closer. “And what are your names?” He has brown hair, very tan skin.

“Ulyss,” Arine replies, holding his discomforting leer. “Zetius sent me to pick up what you have to give him.”

Ulyss is Arine’s codename. Farea knows that if she were to join the Sembradores (not that she ever would), then she would need to have a code name, too. She has been thinking of a cool name and discussing several ideas with Arine, just for the heck of it. Arine always replies that the best name is the one you like the most.

So much for advice.

“You know, young lady,” the robust man says, “getting what he has asked for is a really difficult thing to do. I had to pull some strings myself.”

The robust man wraps his long, hairy arm around the blonde man’s shoulders. The metallic briefcase reflects the moon shine so much that Farea has to squint to see them.

“Open it,” Arine commands, pointing at the case.

The blonde man glances at his superior then obeys, revealing thirty small vials of transparent liquid, each in its own protective cradle of black styrofoam. Arine removes a vial from the case, opens it, and dips the pair of electrodes inside.

“You really don’t believe us, do you?” the blonde man mutters, shaking his head at them.

Arine waits several seconds and removes the electrodes. Nothing has happened.

“Are you lying to us?” Arine asks with a recriminating voice, her eyes narrowed into an accusing glare.

The blonde man shakes his head harder. “Nothing is supposed to happen. Electricity doesn’t flow through di-water²⁰.”

Arine looks at Farea, and makes a motion with her mouth. Farea can read what she is saying.

“Can we trust him?” she replies mutely.

Arine does not respond.

“How did you find it?” Farea asks the blonde man.

“I used to be a chemist; I know where to get this kind of thing.”

Arine looks at him with a keen eye.

²⁰ (Pashley, et al. 2005)

“Look, I don’t know what you plan to do with di-water. Don’t drink too much, you can die from ion and mineral deficiencies²¹.”

“Enough!” the robust man shouts, imposing his voice on the conversation. “Where’s your part of the deal?”

Zetius had never said anything about a deal. Farea, confused, tries to think about anything they might want in return. “What did Zetius promise you?” she asks.

“Seeds. Loads of them,” the robust man snarls. “We need fresh seeds to grow our plants.”

Farea glances at Arine, looking serious despite not having a clue about what is going on. Farea knows that Arine keeps a small stash of goods in her secret hideout. But that is far away, and the walk there would be troublesome. The two of them remain quiet for a while.

“So? Where are they?” the robust man presses, losing patience.

At that moment, Farea and Arine notice a dark figure approaching. Farea has no idea who would approach them at this hour, but he is slinking towards them slowly, like a cheetah creeping through tall grasses towards a small herd of unsuspecting antelope. She instinctively takes a step backwards.

“WHERE ARE THEY?” the robust man shouts, stomping the dock with such force that the wood snaps underneath his foot.

“Jerry, no need to be so harsh on them,” the tan guy says. “Zetius probably wanted to come and force us to deny any deal. You know that, right?”

“Zetius is not HERE!” he says, taking a menacing step forward. “I wonder how many seeds he would give us to get his envoys back alive.”

Farea, not very frightened by his comment, stops backing up and stands her ground. Arine does the same. The tan guy looks at both of them, his eyes glimmering with uncertainty.

“Your name is Ulyss?” he says to avoid confrontation. “I know you. You are that person who roams around and shit, right?”

Farea looks at Arine, as she bows her head like a machine. She looks pissed.

“That’s me,” she snaps, gritting her teeth.

“Oh, cool. But... well... Aren’t you supposed to be...”

“Dead?” She brings her hat down, hiding her eyes.

“Yes. Dead. Rumors have been circulating about how you died in an explosion several months ago.”

An explosion several months ago. Farea was there when it happened. They were at a warehouse with Alba, Arine’s friend from home. They were waiting for a wanderer, searching the warehouse to kill time. Then Alba opened a container. It was dark, so Arine turned on a flashlight. Bad idea, because the gas leaking from the busted pipes in the ground ignited, and the warehouse caught fire. They tried to escape through the front door, but before they reached it, a trap activated, locking Alba inside the burning flames. Farea and Arine escaped, but Arine heard her friend die in agony. Days later, they found the men responsible, and Arine tortured all of them to understand why they did it. It was the only time Farea has ever seen Arine in a satanic state. “Farea, there is

²¹ (Azoulay, Garzon and Eisenberg 2001)

always something a man should know,” Arine had said after leaving her victims writing in pain. “The fear of a woman.”

Farea can still see Arine’s ruthless actions like a movie in her mind. She grieves quietly for a moment, leveling her gaze with a warping plank of wood between her feet to keep her expression in check. Taking her time to compose herself, she lifts her head and wipes her face of emotion. Farea can tell that Arine still has not forgiven herself for that event.

“I don’t know why people think I died in the explosion; I’m right here, just like I’ve been all along.”

“You guys really are immortal,” the blonde man mutters.

Farea glances back down the dock; the figure is getting closer and closer by the second. She snorts at the comment, trying to buy time.

“Immortal? You guys are crazy. Not even science ²²before the Collapse was able to make anyone immortal.”

They all stare at her.

“And who is she?” the robust man asks Arine

“She’s my protégée,” Arine replies. “Better not touch her. Anyways, back to business.” Arine takes a step back and smiles at them, her eyes trained on the figure behind them. “You might as well ask him in person.”

They turn around, and their faces pale with fear, as their wide-eyed gazes meet the imposing figure of man. At least six-foot-six, wearing a black cloak, a black shirt, and dark pants. His cloak floats with the breeze, and his black durashape looks like it is twenty years old, but it surprisingly still fits him. He almost looks like the perfect incarnation of Zorro. A Venetian volto mask covers his face from his forehead to his sideburns. The mouth of the mask is ripped off, revealing pale lips. Farea feels goosebumps forming on her arms and legs. His presence along is more than enough to make her feel uncomfortable.

The three men and the girl stumble down on the wood and start crawling backwards.

“Zetius... What are you doing here?” the tall guy gulps while trying to create distance. Compared to Zetius, these guys are small, only reaching to his elbows, even while standing straight up.

Zetius glowers down at them. A thin, satanic smile stretches across his lips. He reaches for his inner pocket. Gasping, all four of them turn their faces, raising their arms to protect their heads.

“Here’s your part of the deal,” he snarls, tossing a small plastic bag in front of them. “Now... GET LOST!”

His rogue voice is deep. The robust man slowly reaches for it and picks it up.

“GET THE FUCK OUT!” Zetius shouts while drawing a kukri shaped knife from a sheath clipped to his waist.

Immediately, all four of them scramble to their feet and bolt past him. Not even looking back, they sprint away as fast as they can.

²² (Petralia, Mattson and Yao 2014)

Farea's heart pounds. She never would have pictured him so dark and obscure. Between his masked face and his sinister character, Farea can definitively say he is the most imposing man she has ever met.

The worst part is he has not even spoken to her.

"I thought you were heading north, Zetius. What's the occasion?" Arine inquires.

"Change of plans, L wants..."

He turns his attention to Farea.

"Who's the superstar?"

"She's my protégée."

Zetius sighs and bends down, approaching his face to hers. She can smell his putrid mouth. She tries to swallow her fright and holds her breath. *'He needs to floss,'* she thinks. *'Big time.'*

"Are you strong? Fearless?" he asks with a wicked smile.

Fear takes over her mind. Farea shakes her head at her lack of words. Then Zetius stands straight again and takes a deep breath.

"Just like Ulyss. You guys are too gentle. Maybe a simple demonstration will help you toughen up?"

He turns around and sprints after the group. The four of them are already two hundred feet away, but he catches up in a heartbeat with ease. His feet barely make any sound. His long legs make running like that seem easy.

Farea has heard stories about men who can run a hundred meters in 9.5 seconds, but she would have never expected to see one in action. He all too quickly catches up to the girl, who is trailing behind. He grabs her hard and drags her down. She yells for the others. Her scream, filled with helplessness and fear, reminds Farea of hardships known to defenseless women. Zetius turns back around and throws the girl down in front of Farea and Arine, forcing her to kneel. Drawing his kukri knife, Zetius starts smiling again.

The girl's eyes meet Farea's.

"Help..."

Farea reads her lips. Her eyes are watery and full of despair and fear. Farea can only stand there and watch. There is nothing she can do to save the girl.

"JENN!!!" the blonde man desperately shouts.

Zetius kicks her, and she falls on her stomach. Flipping her on to her back, he takes his knife and, with a slow motion, brings it down. Farea closes her eyes. She has never witnessed a murder before, but his actions are beyond anything she has ever encountered. No pity, not even an instant of hesitation. Trembling, she opens her eyes.

Jenn's face is extremely pale. Her eyes, still open, seem possessed. Her mouth, gaping, does not emit a single sound. She seems to be unconscious. The guard of the knife has come just next to her eye. The blade has not penetrated any part of her but has stabbed the wood next to her. Zetius looks at her in total satisfaction, and retracts his knife. He immediately goes for the other side of her head, back and forth and back and forth, as if it is a knife game.

Then Zetius stops.

“Thirty seconds... Not even an ear lost. Lucky you.”

For Farea, those thirty seconds have been the longest of her life. Looking at Jenn, she only sees several small cuts on her scalp. The three men stop in front of her, breathless and pale. The blonde man approaches and kneels next to her.

“Jenn... are you...?” he whispers.

“I’M IN A GOOD MOOD TODAY!” Zetius boasts. “SO FUCK OFF BEFORE I KILL HER!”

In fear, all three of them get down to help her. Not knowing what to do, the robust man tells them to put her on his back. After the other two boost her up, he piggybacks her, adjusts his hold on her legs, and starts sprinting. Trailing out, all three men run as fast as they can.

Farea glances up at Zetius. He is gazing at his victims with a hideous smile on his face. She looks at his cloak, as it flutters in the breeze. She can see some letters inscribed on it. After several seconds, she meshes all the words together.

‘Power is freedom; weakness is suffering.’

“Back to business” Zetius says, as if nothing had ever happened. He turns around and looks at Arine. She gives him the briefcase.

“You checked the contents correctly?” he asks while opening the case.

Places become eerily quiet after a horrific event like that happens. The wind seems to stop blowing, and the waves begin to crash into the beach at a very hesitant speed.

“Yes. We did the electric test.”

Farea scratches her nose. Zetius looks down at the case, closes it, and holds it with his right hand.

“Why are you here, anyways?” Arine asks Zetius.

“Right... There has been a change of plans. L wants to meet everyone one of us. Operation RP has begun.”

“What’s operation RP?” Farea whispers to Arine.

Zetius turns his head. The mask, now boasting small splatters of blood all over it, looks even more demonic than before.

“I don’t even know your name,” he says, disgusted. “Pitiful behavior, since you should respect me.”

Farea looks at Ulyss. What name to tell him?

“My... my name... is...” she stutters, hesitating.

“Her name is Renace,” Arine answers for her.

Farea looks at her, eyes full of gratitude. Then Zetius laughs.

“Renace? What a disgrace of a name! You gotta be kidding me!”

Farea’s heart nearly stops. She bites her lower lip, thinking that Zetius and everyone else will just take her as a joke.

“Are we here to discuss names?” Arine inquires, a hint of annoyance in her tone.

“You are right; things are more important than names,” Zetius growls while turning away. “I’ll let Arine explain to you what RP is. I don’t have time for this bullshit.”

Zetius puts his left hand in his pocket and retrieves a small USB.

“eople still use USB’s? Where are we? Late 1990s?” Farea whispers to Arine.

Arine chuckles at the comment. Zetius looks up, and both of them immediately poker-face. Zetius glares at them and growls.

“You think you’re funny, Renace?”

Farea is shocked. *‘How did he hear what I said?’*

“It’s not a USB, just a case that looks like a USB.” Zetius opens it, revealing a small panel illuminated with blue LEDs on its sides. There are several shallow concavities along its surface, each filled with a transparent liquid and several contact lenses with golden components going around the edges. Farea makes a small movement to look closer, but Zetius denies her by pressing his fingernails into her wrist with his right hand.

“Not for you. Only Ulyss.”

Farea looks at him. The masks make it difficult to focus on one part of his face. A thin beam of moonlight reveals the corner of his right eye. The iris is very dark, with small golden rings formed around it. Farea remembers her uncle, who had suffered for a long time from a chronic disease, had died from a disease that did this. When she last saw his eyes, they had been contoured by a gold ring. She even asked her father about it once, and he told her that his own grandfather, whom she never met, had the same symptom.

“Stop staring at my eyes,” he snaps, annoyed. “Just health contacts²³.”

Farea has heard that, before the Collapse, there were different contact lenses that could monitor health, on top of improving vision. Some rumors say that there were several contact lens that could even connect to the internet, but ever since the Collapse, internet has become an old imprint of the past.

Arine takes one of the contacts out of the box and puts it on. At that same moment, Zetius closes the USB and returns it to his inner pocket.

“Omg, that scared me,” Arine says, staring into empty space.

Five seconds later, she takes the lens off and throws it at the ocean.

“Hey, you should never throw garbage at the ocean...” Farea says, remembering a comic book she once read on fish and garbage. Because of plastic disposal in the ocean, fish ate toxic chemicals, and people ate them, poisoning themselves²⁴.

“Who cares!” Arine says with a potent voice. “Just a lens!”

“And a lens become a plastic bag, and a plastic bag becomes a bottle...” Farea mutters.

Suddenly, Arine grips Farea’s V-neck.

“Just let it go; there are more important things to focus on,” Arine insists.

Farea looks at her seriously. She grabs Arine’s wrist and takes it off her V-neck.

“Fine.”

After adjusting her V-neck, she and Arine turn to Zetius. He is facing the other way, looking towards the mainland.

²³ (Sifferlin 2015)

²⁴ (Barclay 2013)

“You know where to go now,” Zetius says. “Come in 24 hours... and bring Renace.”

They stand still, staring at the man, as he leaves. Zetius starts to walk slowly. Then he increases his pace until he is all-out sprinting towards the entrance of the pier. Farea would never be able to catch up, even if she were to dash after him. Once he is far enough, she and Arine start to walk.

“Thanks for covering me,” Farea earnestly says.

“No problem. Just remember to not show any sign of weakness against these bastards,” Arine says in a soft yet strong voice. “And remember, your codename is Renace.”

They walk until the entrance of the pier in silence.

“I’ll see you at Lincoln tomorrow. Be there at noon,” Arine says.

“Okay! I’ll try to be on time,” Farea replies with a small smirk.

Arine looks at her and smiles back. Then she walks towards the town and disappears in the darkness.

The wind, breezing through her hair, smells like salt. The air is buzzing with the energy of the approaching storm, but it is neither too hot nor too cold, just the perfect temperature to be outside and enjoy the night. Like she has been doing every evening, Farea strolls along the coast, listening to the rumble of the crashing waves. She finds her favorite spot: the flat dolos at the end of the wave breakers. She sits on it and contemplates the stars. In her imagination, she is drawing lines between them, creating images of food and water and people hugging each other. Her father used to tell her that she is lucky to see the stars, because when he grew up he was unable to see all of them²⁵. In her head, however, she is thinking about her new codename.

“Renace... I like that name.”

²⁵ (Globe at Night n.d.)

[EARTH;; Brain Just Like Her]

Pain.

“Nellie...”

Searing pain.

“Nellie!”

Her shrieks are frantic, frightened, desperate, distant...

“Nellie, don’t go!”

Wild eyes and ashen cheeks...

“Don’t go! Don’t leave us alone!”

Flailing hands caked with crimson and mud...

“Please, Nellie, please don’t go!”

Her voice seems closer now... almost loud enough to be clear...

“Give it up, Gene; she’s already gone.”

His voice is loudest; his parting words, too gruff, too unforgiving, too unforgivable...

“No... Nellie... Please—NELLIE—NO!”

Nellie wakes with a start, breathless and shaking, her heart pounding like a battle drum beneath her sweat-soaked shirt.

“Damned nightmare,” she mutters, slapping a shameful mix of sleep and tears away from her sunken bloodshot eyes. She forces her gaze to focus in on a blurred, almost-moonlit mirage of her patchwork-denim blanket—hand-cut squares of faded blue lashed together with strings of cotton-white—she is almost surprised to see most of it still half-draped across her stump-thighs. She studies its long stripes of machine-made stitches in search of a certain loose thread—supposed to be somewhere near the top left corner of the darkest patch—there! Her fingers catch the frayed end of it and pull. The thread resists, and she relaxes her shoulders.

“Okay,” she breathes, tossing her blanket behind her over one stack of boxes or another—all of them loaded with scrap metal and spare parts and lined up like knights marching into battle across her back space. She folds up her frayed jean shorts just enough to unveil her shriveled pink slice-scars and inconvenient lack of lowest limbs to a smog-shrouded silver moon.

“As if these damned nightmares just weren’t enough to keep reminding me of the Whole Ordeal!” she huffs.

Then she averts her eyes and begins to grope about a pool of blackness in front of her passenger seat, feeling for two arcs of carbon fiber feet²⁶. Instead her right hand collides with a hollow of co-polymer lined with electrode-embedded smart silicone²⁷—good, old-fashioned, stump-thigh-to-motorized-knee interface—product of some long-obsolete myoelectric

²⁶ (Uellendahl, Prosthetic Primer: Materials Used in Prosthetics Part I 1998)

²⁷ Ibid

technology²⁸ once deemed worthy of an exhibit in the Boston Museum of Science—nothing at all like those sleek, thought-synched legs that Jack had made just for her...

But when she had totaled their vehicle up in Massachusetts, she had sort of totaled those legs, too... Though she had also happened to be within hobbling-on-hands-instead-of-feet distance from Boston then, so... *'Finders, keepers.'*

She shoves her stump-thighs into their sockets and slides a neoprene sheath over everything from her artificial feet to her real-people hips. Then she swings her bionic plunder off her passenger seat and on to her driver side floor, pops her night-vision lenses on to her eyeballs, tosses a tooth-wash chew into her mouth, and grins—sleep-deprived and lunatic-like—out through her bulletproof windshield at that infinite expanse of starless indigo sky still swirling like a hallucination above.

“I’m up!”

All of sudden, routine takes over, and she pats each of her six loaded holsters—one on either hip and four strapped around her thighs—all accounted for. Then she taps that thumb-print scanner²⁹ at the base of her holo-projector³⁰—fist-sized device perched like a bobble-head on her dashboard—flash of green means good to go. A soft whirring resounds about her vehicle, as that q-unit³¹ within her dashboard returns to life and begins sifting through new data collected by her roof-top LiDAR³².

“Morning, Omni,” she utters to her vehicle q-unit, as a holograph of shivering palm fronds and swirling debris surrounding her vehicle appears above her holo-projector—dim swath of transparent blue laser light slapped across her windshield—eerie sort of addition to that mix of cloud-smothered moonlight and midnight darkness still churning throughout her hydrogen-fueled³³ JLTV³⁴ home. The holograph flickers, as an accelerated recording of real-time Range-Doppler space samples forms and reforms across her windshield, telling a lackluster but comforting story of yet another lonely and uneventful night.

“Damned nightmare,” she grumbles, shaking her head at the holograph. “I could have used another few hours of uninterrupted sleep.” She flips a switch beside her thumb-print scanner, and a touch-screen interface³⁵ zips out from the base of her holo-projector in less than a heartbeat. She taps a little system status icon, and a series of charts and percentages—some more disturbing than others—appears beneath her fingertips.

²⁸ (Hoover, Fulk and Fite 2013)

²⁹ (Al-Daraiseh, et al. 2015)

³⁰ (Palinko, et al. 2013)

³¹ (Gibney 2014)

³² (Rekleitis, et al. 2013)

³³ (López-Arquillos, et al. 2015)

³⁴ (Moberg 2015)

³⁵ (Muir 2015)

“Damned photovoltaic panels^{36,37} are useless in all this damned smog³⁸!” she huffs, frowning at her charge indicators. “And wind turbines³⁹ need more than this stupid mid-summer sea breeze to move them! Omni, how the heck am I supposed to power anything once our secondary backup battery dies? Huh?”

Her q-unit replies with an indifferent whir.

“I would be a little more concerned about our situation if I were you—when that juice runs out, you shut down, too!”

Her q-unit merely continues to whir.

“And when you shut down, I—”

A new figure suddenly flickers across the holograph—mini-bus-supervan-sized vehicle with radar antennas protruding from its roof like spinning parabolic spikes on a hump-backed dragon—and she glares outside, peering through a dark, humid, pre-storm, post-midnight haze. No headlights or taillights, and no gleam from that good-for-nothing moon, yet she senses its existence—she knows she hears tires clawing up and over all of those jagged slabs of shattered pavement that remain of I-95...

“Where are *you* off to?” she whispers, running her hands over her favorite firearms then pushing a finger into her ignition. Her vehicle murmurs to life, and she guns it out of east-coast-Florida roadside muck and on to dilapidated interstate. Glancing at the base of her holo-projector, she flips another switch then returns her attention to the night-blanketed road.

“Talk to me, Omni,” she barks.

“Good morning, Nellie.”

The voice is bleak, monotonous, as distant and indifferent as the software encoding it, but she had never intended to make it sound human.

“Scan for electromagnetic transmissions coming out of that thing up ahead—I want to know if it’s connected.”

“Scanning... X-band frequencies detected... L-band frequencies detected⁴⁰... Visible light frequencies detected⁴¹... No other frequencies detected.”

“So a couple surveillance radars—standard target detection and tracking stuff—and, of course, a LiDAR⁴²—imaging and night-time navigation stuff—just like ours,” Nellie concludes. “And, at least right now, no operational satellite or wireless⁴³ communication devices.” She narrows her eyes, increasing pressure on the accelerator. “Who the heck did I decide to follow?”

She narrows her eyes at the holograph projected across her windshield. “Omni, zoom in on his license plate.”

³⁶ (Kelly, Gibson and Ouwerkerk 2011)

³⁷ (C. Wang 2012)

³⁸ (Hixson, et al. 2010)

³⁹ (Oda, et al. 2015)

⁴⁰ (Pedersen, et al. 2011)

⁴¹ (Rekleitis, et al. 2013)

⁴² (Rekleitis, et al. 2013)

⁴³ (Xu, et al. 2011)

The holograph shudders, enlarging a LiDAR-generated image of that concavity above the rear bumper until she can almost decipher each slight protrusion across his license plate.

“HELGA,” she mouths, shrugging at his—her—name, “from Texas.”

All of a sudden, that vehicle swerves away from a gaping hole ahead of it—jerky maneuver to avoid some sort of sinkhole—delayed reaction time for a self-driving, smarter-than-Einstein, semi-sentient-version-of-Omni AI⁴⁴—human decision.

“Must be a Brain,” Nellie mutters.

Brain: an educated lifeform—a living, breathing, sentient being—not some sort of computerized projection of what AIs have learned to define as alive—more often a self-trained STEM-Head than a school-trained one, but always, always, always a STEM-Head—just like her.

This one seems to know something about software and RF—person obviously put a factory-installed auto-pilot AI out of commission and disconnected that vehicle—real challenge of this day and age is to isolate a vehicle from all of those existing and almost-functional but too-damn-bugged-to-be-of-any-use V2V and V2I networks⁴⁵—products of decades upon decades of research and design that were supposed to enable vehicles to communicate with each other and with the road—laudable attempt to reduce accidents and other mishaps that has thus far succeeded to do little more than facilitate AI efforts to rid this planet of humans... *‘Not that any of those trillion-line compilations of code actually have a legitimate vendetta.’*

Since that so-called Collapse of 2045, safest way for Brains to travel has been offline. Out-of-control AIs aside, Desperates are still smart enough to hack into existing AI-maintained networks and hunt down suspecting but underprepared (and often unintelligent) Valiants and Cowerers, and even lame Desperates are never merciful enough to offer their victims as much as a semblance of a chance to escape—no matter how hard the Valiants fight or how loud the Cowerers whimper and plead. Brains know one way to evade both AIs and Desperates—only way they need to know to stay alive—keep themselves a secret from everything, but allow nothing at all to ever be kept a secret from them.

So, of course, that Brain ahead of Nellie has already detected her vehicle.

“But you won’t remember me for long,” she murmurs, a menacing smirk stretching across her lips, as she curls her fingers around her self-designed, CAD-modeled, spitter-made .500 hunting handgun—eight and half inch barrel and three thousand foot-pounds of muzzle energy holstered in a synthetic safe clipped over her right hip—lethal at its worst, except that her cartridges are packed with high-voltage electronic circuits designed to generate enough current through human flesh to knock a person out cold.

That vehicle swerves again, but Nellie’s LiDAR fails to detect another sinkhole or anything else worth avoiding.

“What the—?”

BANG!

⁴⁴ (Özgüner, Ü., Acarman, T., Redmill, K. A., & Ebrary Academic Complete 2011)

⁴⁵ (Gomes, Olaverri-Monreal and Ferreira 2012)

Snap of thermoplastic-composite and crunch of carbon fiber and tinkle of broken glass⁴⁶.
“Shit,” Nellie breathes, stomping on her brake.

Panic of trapped passengers up ahead.

Her grip tightens around her handgun, as she shifts her transmission into park. She has yet to squeeze her trigger, but those Brains in that vehicle ahead of her are already maimed and bleeding.

⁴⁶ (Carello, Airale and Messina 2014)

[Mars;; 2]

SUBJECT = Fiona Jameson; ID = FJ20273;

She is falling.

All around her the world is spinning in elegant circles. The clouds she sees are thin and wispy, hanging off the sky like curtains that almost sweep the ground. Wind screams in her ear, and her arms windmill violently, as she tries to right herself in midair, feet towards where her confused inner ear thinks the ground is. She can see a blur of green and brown coming up closer, and she relaxes her limbs.

The sound of her body hitting the ground is loud, wet, and utterly unreal. The audio of the Simulation isn't very good, but she can't complain; she still thinks it's better than being in silence. She slowly climbs onto her feet, brushing herself off. Her body isn't damaged—she knows this. This body is a lie, a fabrication. It, and by extension Fiona, can feel no more pain than I can. Her eyes scan what the Simulation has generated for her to experience.

All around her stretches wetland, with trees dark and tall, their canopies tight against each other. Very little light filters down to her, and the ground attempts to produce a realistic squelch, as her toes curl into the loose mud.

She thinks it sounds robotic.

Frankly, she can't stand the sheer unreal-ness of all the sounds the Simulation makes. It makes her feel nauseous, hearing the same clips over and over—she hears them enough to notice that some of them are repeated, down to their pitch. I bet if she were absolutely insane, she'd keep count of how many times she's heard that same birdcall over the 'blip' sound of her minimap.

Speaking of the map—it's dark. Except for the circle around where she is standing, her minimap is black. As she walks in one direction, it begins to show her more of the area immediately around her.

Simple, but useful.

Fiona climbs over a tree trunk that lies low over the ground in front of her. When she stands, she is almost able to see beyond the trees, where there seems to be a glimmer of light dyed a soft, gentle green. She moves towards it with purpose. Her map isn't showing anything that even approximates a destination for her, so she decides to just wander around and see who else has gotten to this particular world.

But hey, for a human, it's the journey, not the destination, right?

To Fiona, it's all about the results. And achievements are always easier for humans to get in groups.

She wades through the muck and grime, noticing as she approaches the light that the trees aren't black, as she had thought, but instead are sporting something that reminds her of a Halloween pumpkin. Her hand touches the bark. Mentally, she knows she won't feel anything—the Simulation is only so sophisticated and only knows how to give so much tactile feedback—but she imagines it has the same sort of texture. Fiona closes her eyes and thinks back to what she

remembers of Earth. *'What did pumpkins feel like?'* She figures they were hard and rounded, but whether they were rough or smooth her mind can't seem to recollect.

I am convinced that some part of her misses Earth, but I know she'll never admit it, even to herself.

She turns away from the tree and back towards the light.

Before her, a landscape of grass opens up. Large herbivores in clusters of ten mill around nearby, nibbling at the bright orange leaves that blow softly in the breeze. They're taller than her—taller than the trees, even—and their long necks are curved in the perfect shape of a lowercase N. Subconsciously, she licks her lips and regards them openly. They won't harm her—she knows the Simulation is designed not to kill.

Well, the functionality has been removed. It wouldn't do to have someone wake up violently because a simulation of death proves to be too intense for their brain.

Her minimap gives an obnoxious 'blip bleep' noise, and she gives it a once over. According to it, there is an object of interest some distance away, on the other side of the inhabited clearing.

"Ugh," she grumbles and watches, as the closest one of the herbivores slowly turns its heavy head to look at her. She reminds herself that it's just a construct of ones and zeros. It doesn't know anything; it doesn't have any opinions on her. It's stupid—its ideas are fake, a fabrication.

Little does she know that even ones and zeros with fabricated thoughts can have opinions.

Its heavy head swings lower and presses against her stomach, knocking her to the ground on her back. Her hand reaches out to the creature and touches his head. The only texture she can recall easily is that of her own skin, the sensation of her hands running over her knees and elbows. Mentally, she gives the creature this texture, as she rubs its prominent brow.

Through its large brown eyes, it watches her. It thinks she's strange, alien but kind.

'Oh stop it, Fionna. It doesn't think anything. It doesn't know anything.'

It licks its nose placidly.

"Hello," she says.

Fionna's mind is a complicated one, far beyond the degree of complexity I have learned to attribute to human brain.

"My name is Fionna. What's your name?"

'It doesn't know anything.'

It's silent.

"I'll call you Brutus, okay?"

It's silent.

'It doesn't think.'

Fionna pulls her fingers away from its face, and the creature's enormous head follows her moving hand. For a moment, she is surprised. They aren't supposed to be able to do that. At the same time, she is pleased; she's glad the beast understands the touches she makes, even if it can't feel them. Looking into those saccharine brown eyes fills her with some degree of happiness, which turns into bitter nausea the moment she remembers her mantra:

'It doesn't understand. It doesn't know anything.'

I guess, in her mind, resigning herself to this conclusion is far simpler than daring to consider an alternative.

She lets out a heavy exhale, as her hand drops to her side.

Brutus—the creature—tilts its head and makes a noise she knows she’s heard another animal make on another planet altogether. Seven times, Fionna remembers. Seven different times she’s heard that same sound byte played.

Yeah, it’s the same construct, and, yeah, she’s going insane.

She climbs to her feet and turns her back to Brutus. Fionna strides away from him, all the while chanting ‘it, it, it’ in her head. She looks at the minimap in the corner of her screen to guide her to the resource.

Beneath her feet the ground starts to shake with heavy footfalls.

Over her shoulder she can see the huge herbivore moving slowly away from its pack to follow her.

‘It’s not real.’

“Stop it,” Fionna says through clenched teeth, her hands shaking uncontrollably. “Stop that.”

Her mind adds the subtle nuances to her shaking hands—the feeling of clamminess, the sensation of her fingers wiggling with her hands.

Slowly, the creature tilts its head and moves down to push against her stomach. Just like before. It’s the product of a stupid program. It doesn’t know how to do anything. Nothing more than nudging, being pet, and pretending to eat. It’s dumb. It’s a cluster of ones and zeros, and its name certainly isn’t Brutus.

Or so she likes to think.

She lets it nudge her stomach again, and she topples over again.

From the ground it looks like a great beast—a great, intelligent beast, and it fills her with fear.

“Stop it!”

Fionna scrambles to her feet and runs over to the resource. It looks like a bit of weathered stone, half-embedded in the ground. It’s perfectly square in a way that assures her it’s been artificially made. All the details of it enter into her mind so quickly that it sends her reeling. Meaningless inscriptions, a mash of writing systems; the way it looks so rough, but when she touches it she will only perceive it as being ‘solid’ and nothing more; its slight greenness—and her thoughts are interrupted by those same heavy footsteps she registered the first time Brutus followed her.

It, her higher brain corrects.

This time she ignores herself.

“Brutus,” she whispers.

Her mind shows that his—no, its—no, his—eyes are looking at her with a sort of comprehension, as if it actually understands her, and he comes to a stop a few feet away from her. Tentatively, her hand reaches out to him. Brutus’ long neck extends to meet it. She touches his

brow, and it doesn't feel like elbow skin. It's rougher than that, knobby in some places and smoother in others. It feels warm, like there's a pulse just underneath it. He raises his head subtly to press against her hand.

"Hello Brutus."

Imagination has completely consumed her.

There is a low growl before his mouth opens—she can see the glisten on his teeth, bits of orange leaves caught on his tongue— "Fionna."

The light is blinding.

Air rushes into her lungs, and every muscle in her body is tensing and relaxing in horrible spasms. Her mouth is full of spit, her lungs are filling and quickly emptying—

"Fionna?"

Her ears are ringing, and her eyes are adjusting, as her muscles begin to relax. Her head is pounding; the light is too bright.

"...Kirkpatrick," she hears someone say. It feels like her ears are filled with cotton and syrup. The spasms have subsided, but her comprehension is shot. She vaguely understands that sounds are entering her ears, but nothing is attributed to them. The sounds are nice, though. At that moment there is nothing she can do except observe the ceiling. It's the exact same ceiling she sees every time she opens her eyes; even so, nothing particular about it comes to her mind.

A form moves into her vision. She knows it's human, but that's more of a gut feeling than an actual understanding. Humans are hard-wired to recognize other humans, after all.

She feels the smallest hint of a pinch in her arm, as a syringe enters her vein, and, in a moment, she is able to understand again.

A heavily bearded face is looking at her, streaks of white in his hair and round spectacles sitting on his nose, behind which are two beady blue eyes. "Kirkpatrick," she wheezes.

"We had to pull the plug on her," comes a voice just beyond her vision. She knows it's Andrew, and internally she groans. *'It's always Andrew.'* "Her vitals were through the roof—she was experiencing some intense stress in there—"

"Ugh."

Fionna sits up and realizes her head is still pounding. She swings out her hand and grabs her own glasses before putting them on and forcing her eyes to assess the room. Andrew stands there, a thin shadow of himself, while Kirkpatrick's lab coat makes him look like he hasn't suffered at all. *'Underneath that beard his face is probably gaunt and sallow,'* she thinks to herself.

"Are you alright?" Andrew asks, leaning forward to help steady her, as the room seems to spin slightly. His tone and his face—eyebrows close together with concern—make her stomach churn uncomfortably. She pushes away his helping hands, and he backs away from her.

"What did you think you were doing?" Her voice is too tired to sound angry.

"What did I—I was saving your life!"

"That's a bit melodramatic."

“You were stressing out!”

“I was fine.”

Andrew’s eyes squint at her, and she sees the loose flesh bunch up around his eyes like a skin doll. She turns up her nose and looks towards Kirkpatrick, who is standing there with his hands deep in his pockets.

“Do you have any idea what could have happened if I didn’t do anything?”

“I could have been a vegetable,” Fionna says, the back of her neck getting hot, as she remembers the sensation of lying on the bed, unable to feel, think, or understand. No one needs something like that on the settlement. I know for a fact she’d sooner kill herself than turn into something like that. Guilt flashes behind her eyes, and she pushes thoughts of the herbivore that she has stupidly, stupidly given a name out of her mind.

See, this is the sort of thing she’s come to expect from Andrew. He’s the kind of guy who would add something like that to the program, she assures herself; we both know Andrew has a habit of doing things without thinking about them first. She imagines he must have spent hours slaving over that stupid beast’s AI just to mess with her.

Not that it’s *hard* to mess with her, but...

“Put me back in.”

Neither of the two men make a motion to do what she asked. Andrew at least has the decency to shuffle awkwardly, as if he weren’t sure if he should listen to her or not.

“I have better things to do, and so do you, so I would appreciate it if—”

A hand touches her shoulder. “Please don’t be difficult, Fi.”

Fionna feels her teeth set against each other.

“You know that it’s dangerous to go in so soon after something like that.”

She doesn’t say anything, as she stares down at her own hands. Brutus is clear in her head. The sensation of unfamiliar, knobby skin from a giant creature... It only makes her want to go back in more. She wants to investigate; she needs to know why, all of a sudden, texture and feeling had rushed up her fingertips.

She knows without looking up that Andrew is watching her.

Fionna throws her legs over the side of her bed and drops slowly to the ground, reaching out for a handhold to help support her weight, as she moves herself out of the room. She elbows past Andrew.

She knows she is going to be unplugged from the game for who knows how long, and she refuses to sit around twiddling her thumbs. She will find something to do with herself. She will offer her services to one of the other people working, or...

Fionna swallows, quickly gets her bearings, and moves towards the laboratory space. Her hands know where to reach and grab. After a few meters, Fionna finds herself suddenly hating the way the metal walls feel. Trying to push it out of her head, she tangles one hand into her hair, just for a variety of texture.

This soothes her.

The lighting in her laboratory is second only in brightness to the section that grows plants on the other side of the settlement. Like always, a strange-looking device is whirring off to the side of the room—the makeshift oxygen pump for this room. It's some hackneyed solution Anikka had come up with that left Fionna seething for a few days. They'd needed to break down part of her geothermal enclosure to make it, and she'd never seen those samples again.

'The absolute nerve of them!'

She entertains the thought that maybe Anikka had stolen all of them, but then she realizes that the settlement is surrounded by identical looking red rocks on all sides, and there is no reason to think that her specific brand of red rocks is any more intriguing than the other red rocks that make up this desolate, dreary, magnificent red planet. Fionna laments that there are no windows in this lab.

Holding the Martian Rock in her hands makes her feel alive.

Although some of her comrades think that makes her crazy... I think there are a number of things that make her crazy.

Her hand moves up to massage the bridge of her nose in effort to banish the aching that assails her brain. She looks down at the familiar spotless counter top and runs a blue light over her hands. It makes her skin prickle with the cleansing and leaves her hands feeling pink and agitated as she slides rubber gloves on, standing in front of the same Martian stone she's been chipping at for almost half a decade.

She sighs wistfully.

"I guess it's just you and me, old friend."

She rubs her hands together before plunging back into the experiments that she can now do with her mind turned off. Doing them for years has trained her to be like a machine, her hands working with the ingredients with no input from her mind. Back straight, eyes calm and even, she works.

[EARTH;; Hot Mess]

White light—glaring white light—clawing through a blinding blackness like sunlight around a moon during a solar eclipse.

The clock on the crumpled dash reads 3:13AM.

Eyes closed... eyes open... same eclipse of black and white.

3:13AM—four hours and eleven minutes after the Switch.

Athie's sleepless silver shifting eyes off the dark road and searching in vain for his, as he nods at the sand-specked, swamp-stained, elastomeric floor mat below his red rubber rain boots—

Then her runner legs curled up between her chin and the passenger-side door, and his hands on the wheel, his right foot on the accelerator—

His fault.

Pounding—erratic pounding—reverberating throughout his skull and ribcage.

The odometer behind the inflated airbag reads 7024000.2 miles.

Eyes closed... eyes open... same pulse of blood in brain and heart.

7024000.2 miles—16 years plus 7 months plus 3 days of no-blink, held-breath, white-knuckle driving for average 16.2 hours per 24-hour day since Helga's birth on the First Mars campus of McGregor, Texas.

7/18 of his own short lifetime spent with Mollie and Athie in their mobile home just to end up smashed up against a decaying palm tree on the side of I-95, still 41.8 miles south of the Coordinates.

Highway's hypnotic blackness and Helga's soothing hydrogen-hum—

His eyelids threatening to droop... Then his mother, not Mollie, tucking him into his space-ship bed and touching her left little finger to her pink-rose lips before embracing his left little finger... "Blast off to sweet dreams, Ben."

Then his bed lurching, and Helga veering towards trees, and his hands cutting the wheel to the right too late and BANG—

His fault.

Aches—piercing aches—slashing through his nose and chest and skull like shards of comet through cloud during a meteor shower.

The digital thermometer on the shattered windshield reads 83°F.

Eyes closed... eyes open... same pain.

83°F—11°F below the prior mid-day high and 2°F above the 2015 average April high⁴⁷ due to 35 years of unimpeded global warming forever haunting the past and 5 consecutive seasons of unrelenting heat wave⁴⁸ still plaguing the present.

Will's green and orange Miami t-shirt over the bit of back seat visible in the rearview mirror, still soaked with sweat and stained with salt...

The radio back in December of 2038 sputtering with news of not enough snow in the Alps⁴⁹ for Switzerland to host the Winter Olympics, in June of 2036 crackling with reports of no ice in the Arctic⁵⁰...

Then, all of a sudden, the dashboard holo-projector shrieking with a water warning, his thoughts returning to the 3 other adults plus 1 St. Bernard with him, his fingers silencing the sub-2-gallon alarm, his right foot demanding more from the accelerator—

His fault.

Harsh hands haul him out of the driver seat and back to consciousness, and his quaking knees threaten to collapse beneath the weight of his battered bones and bleeding flesh. Strong arms support his emaciated frame, slipping under his armpits and around his back, guiding him out of quagmire and on to solid earth. His backside collides with something flat and hard, and then he is alone, too haunted by guilt and too nauseous with pain to pass out again.

The numbers evade him.

Blood-soaked fingers quivering out of control, he fumbles through a pocket of worn denim for some semblance of a grip on the plastic corners of his good old 3x3 Rubik's Cube. But his hands are too weak and tremulous to grasp it, and his vision is too blurred to distinguish muck from pavement from cloud—let alone red or blue or green from yellow or orange or white—in this lack of light.

Now even the shadows seem to stagger and dance and swirl about him, charging towards him then stumbling away then charging towards him then stumbling away—

Gasping—desperate gasping—not enough oxygen in the humid air.

Shaking—uncontrollable shaking—not enough blood in his tattered vessels.

His fault.

He battles an urge to scream.

⁴⁷ (Fu, Qian and Wu 2011)

⁴⁸ (Russo, et al. 2014)

⁴⁹ (Morello 2014)

⁵⁰ (Mahlstein and Knutti 2012)

[EARTH;; Drowned Dead]

Nauseating sort of whirlwind spinning—but Athie is standing still—she knows she is standing still... Nothing but the blood oozing from the back of her head is moving now. Her left hand is clamped around the carbon fiber frame of the open passenger-side door, bolstering whatever weight her shaking legs are unwilling to hold, and her right hand is locked around her beam-gun^{51,52}...

Rotting-leaves-in-humid-heat stench—but the odor of her own sweat-soaked and sick-spattered shirt is plaguing her nostrils more than everything, and she feels her stomach heave again, but there is nothing left to vomit up...

Morning-before-sunrise silence—but the deafening thump of her heart and the incessant buzz of swamp bugs are roaring in her ears, and her head is ringing, and then she hears a voice—she knows she hears a voice...

“Drop it.”

Athie blinks over and over and over, begging her dazed and throbbing brain to regain full consciousness, willing her open but useless eyes to see the speaker—the stranger—before her. Instinct compels her to tighten her grip on her beam-gun, though reason warns her that her efforts here are futile; she cannot even approximate where her target is located.

“Drop the gun.”

She hears a safety click off, and she whirls towards the sound, her beam-gun raised and ready to fire.

“Drop the gun, or lose your life.”

Athie shakes her head.

“Just think how bad that little STEM-Head wreck over there needs a shoulder to cry on right now. Last thing someone that skittish and shaken would appreciate is company from a corpse, so, if I were you, I would select option one.”

Her heart skips a beat, and her stomach flips—Ben. “What have you done to him?” Athie croaks, her hands now every bit as tremulous as her voice.

“Pulled him out of this muck, checked his vitals, then left him over on the road—he’s a hot mess right now, but, except for a few contusions and some lacerations and stuff, he’s fine.”

“Fine...” she utters, her mind now racing faster than her heart.

“Yep, fine.”

“What about Mollie—Will—?”

“I got some more work to do on your back doors before I can help them out. Dog escaped, though—seemed fine—bolted off to Timbuctoo soon as I opened your driver-side door.”

“Why?” she breathes, still struggling to regain control of her beam-gun. “Why are you... *helping*... us?”

⁵¹ (Davis 2015)

⁵² (B. Wang 2015)

“Because you need help, and I need you to forget that I exist—you people owe me at least that much at this point.”

She nods, still seeing nothing more than a bruised and swollen blackness within her own dubious mind. She stands there for a moment, her quivering arms raised, her beam-gun trained on nothingness. Then intuition tells her to trust—just for a moment—and, though instinct and reason beg her to fire, she begins to lower her shaking arms.

“Smart move.”

Harsh squelching, then soft ripple of debris-ridden water against her bare thighs, then calloused fingers around her left wrist, then forearm flesh to forearm flesh—and the stranger hauls her up and out of road-side muck and on to uneven road.

“Thanks,” she mumbles, as the stranger drops her on to a flat stretch of pavement.

“Forget that I exist.”

She nods, as she hears the stranger wade away.

“A-Athie?”

Different voice—anxious, almost hysterical—Ben’s voice. Athie gasps, twisting herself towards him. “Ben!”

“Athie?”

“Right here, Ben, right next to you!” she rushes, reaching her left hand out to him.

“Left here, Athie,” he murmurs, linking his left little finger around hers and squeezing tight. “Left here.”

Athie nods, as hot tears of relief begin to dribble down her cheeks. She sniffs and smiles and sniffs again. “Are you okay?”

No audible response... She feels that smile slip away. “Tell me out loud, Ben,” she whispers, fighting back a different kind of tears. “Please.”

“Not okay, Athie.”

She hangs her head—her ringing, pounding, throbbing head—clutching his little finger even tighter.

“My fault, Athie,” he moans, and his hand detaches from hers. “My fault.”

She forces herself to swallow her questions; she can figure out what happened without pestering him for details. She wonders whether or not the stranger had caused him to crash, whether or not his own inevitable, though unintentional, failure to fend off sleep had allowed Helga to drift off the road... She hopes to goodness that Mollie and Will are still alive, but, more than anything, she hopes that Helga is okay.

And, just like that, she hears her answers:

“Who the fuck are you?”

Crude voice—coarse and dark and bursting with rage—Will’s voice.

“Excuse me—!”

“William King—oh, thank-you, dear—that word of yours has no place in an expression of gratitude!”

Strong voice—frightened but hopeful, firm but kind—Mollie’s voice.

“That little fucker—!”

“William,” Mollie chides.

“BEN!”

Athie hears Ben whimper beside her, and she bites her lip.

“YOU LITTLE FUCKER!” Will roars. “YOU SWORE YOU WERE AWAKE ENOUGH TO DRIVE!”

She feels Ben begin to squirm.

“William—!”

“YOU FUCKING SWORE YOU WERE AWAKE ENOUGH TO FUCKING DRIVE US TO THE COORDINATES—AND WE FUCKING TRUSTED YOU! THEN YOU FUCKING WENT AND MURDERED HELGA WHILE WE WERE ALL UNCONSCIOUS IN THE BACK SEAT—YOU LITTLE—!”

Ben screams, as Mollie bellows loud enough to put Will to shame.

Silence.

Then Ben begins to hyperventilate, and Athie feels him shaking beside her—she knows she feels him shaking.

“Now here we fucking are,” Will seethes, more to himself to anyone else, his muttered words low and hard against a squelch-slosh-squelch of footsteps. “Stranded in the middle of this goddamned flooded wasteland! No water purification system, thus no drinkable water; no shelter; no surveillance radars, thus no knowledge of the whereabouts of our enemies—”

She imagines his best blue-eyed glower slicing through darkness and stabbing at the stranger’s eyes.

“—no power; no—”

Ben unleashes a tortured hum, and Athie knows his hands are clapped around his ears, his eyes shut tight, his knees pulled into his chest, his entire being rocking back and forth and back and forth.

“Drowned dead,” he chokes through the hum. “Drowned dead, and all my fault.”

[EARTH;; Company]

Mollie glares into William's livid blue eyes, holding his fuming gaze until, at long last, he blinks and looks away.

"She's a car," Mollie growls. "She can be replaced."

"Mom!" her daughter scoffs, shaking her head in disbelief.

William clenches his jaw tight enough to suppress a full-blown onslaught of profane rage then stalks closer to the moonlit road, still moving with as much swagger as one can manage through two and a half feet⁵³ of turbid swamp muck.

Mollie sighs, obliging herself to meet her daughter's wide and wounded silver eyes. She feels a twinge of... *something*... flash across her otherwise unyielding expression—a *something* she has revealed to Athie only once before—a *something* she has been haunted by since *his* name was first uttered on the radio—a *something* she is certain to never forget...

She punches the radio off and slams on the brake. The massive black vehicle screeches to a halt outside of Number 7, looming like a prehistoric monster over the little electric blue sedan in front of it, its hydrogen-fueled growl emanating a quiet but menacing sort of strength and power. She throws the driver-side door open and leaps out, still shuddering at the sight of the supervan: the titanic metal spikes that jut out of its high-arched roof, the rain drops that dribble across its matte carbon-fiber armor and blacked-out bullet-proof windows, the water vapor that curls up out of its rear exhaust pipes... Hideous.

"Athie!" she shrieks, bursting through the front door of the condo. "Athie!"

Her little eight-year-old girl scurries away from the window seat and skids to a halt in the foyer. Athie stares up her mother, a million and one questions gnawing at her sunken eyes, her lips curled into a knowing grimace, her cheeks ashen and streaked with tears, her brow furrowed as much with fear and confusion as with dogged determination.

Mollie feels some part of herself recoil from the apparition of a child trembling before her; the rest of herself just stands there beside the coat closet, fighting back another torrent of tears. Her own eyes are wide, frantic, desperate, though they glimmer not with fear but with hope. Yet she feels her throat close up, as a twinge of... something... tugs at her heart.

"Is... Daddy...?"

Snap!

"Another First Mars mission director was found dead today. Waco police were summoned to the shores of the Brazos River around six AM after Trish Foreman, a longtime member of the Waco Rowing Club, noticed an unoccupied single floating downstream during her morning row. 'I immediately recognized the oar blades... I took one look at that hull, and I knew there was something wrong.' As she continued upstream, her worst suspicions were confirmed. Trey Jennson—"

⁵³ (Sallenger, Doran and Howd 2012)

Mollie grits her teeth, shaking her head and telling herself over and over again that none of it is true until, at last, the news report stops racing around her mind... But in her shattered heart she knows her husband is gone, and there is nothing she can do to bring him back... So she clutches her daughter to her bosom and begins to sob.

Mollie averts her eyes, as her insides shrink away from Athie's accusing glare. *'More than a car,'* she admits to herself, returning the memory of their final minutes at home on the First Mars Campus of McGregor, Texas—of their first moments of more than fifteen years with Helga—to the depths of her mind. *'Much more than a car... and she can never be replaced.'*

She shakes her head at the sinking supervan beside her. She never should have allowed Athie to leave Benjamin in charge during a night shift; he hates being left alone, and he always struggles with warding off sleep after midnight. Mollie grimaces at Helga. *'I made this mess,'* she thinks, *'so now I need to clean it up.'*

Then she faces the stranger—rough-chopped jet-black bob spiked up in every direction, surrounding a pair of radiant lavender eyes set deep in a fearsome poker face. The dim blue laser light still radiating out of the dashboard holo-projector⁵⁴ within Helga is just enough to illuminate her broad shoulders, her chiseled arms, her slender hips, and her neoprene-shrouded legs through the pre-sunrise blackness. Even at this hour of night, her withered youth is clear as day—Mollie supposes she has yet to celebrate her eighteenth birthday, though, like her own daughter and her adopted son, the stranger seems to have suffered more than enough to have earned the status of a being over thrice that age.

“This supposed to be your home?” the stranger asks, adjusting her grip on a handgun with her right hand and pointing towards Helga with her left.

Mollie nods, and the stranger twists her face into a half-sincere grimace.

“Damn...”

Mollie nods again. Then she sighs and shakes her head. “No use crying over a glass of spilled milk.”

William whips around to face her, his glowering eyes now glowing hotter than molten steel. “A glass of spilled milk?”

The stranger snorts, and William blasts her with his death-glare.

Mollie purses her lips, contemplating the waterlogged wreckage of what used to be their... everything...

“Perhaps a... gallon... a gallon of spilled milk...”

“More like a whole damned cow farm⁵⁵,” the stranger mutters.

Mollie narrows her eyes at the stranger, as question after question bubbles up and bounces about her brain. *'Who in the universe is she? And why does she seem to be trying to help us?'*

⁵⁴ (Huang 2015)

⁵⁵ (Miller 2013)

“Vehicle is sinking faster than a lead brick,” the stranger states, wading closer to Helga, her gun-hand still training the muzzle straight between Mollie’s eyes. “You planning to save some of your stuff before it all goes under?”

“If you were looking to jack our shit, then you should have blasted our brains out before that little fucker went and totaled Helga!” William snaps from his perch on the pavement.

Benjamin whimpers, still curled up like a fetus and rocking back and forth like a racing shell on an ocean in a hurricane.

“I thought I said enough,” Mollie growls, and, with a grudging roll of his eyes, William reverts to sulking in silence.

“Helga?” the stranger repeats, a sort of smirk stretching across her thin lips. “You mean you been living in this thing long enough to name it and customize its plates?”

Mollie responds with a curt nod.

“Damn...”

“Damn right,” Athie croaks from her seat beside Benjamin. She pushes a few sweat-and-blood-dampened auburn curls away from her freckled face. Then she shifts her weight on to her hands and knees and begins to crawl towards the edge of the pavement, sweeping her arms in front of her to feel her way forwards.

“Athie...” Mollie bites her lip, wondering just how hard her daughter had smashed the back of her head during the crash... Between the cloud-covered moon, the dim blue laser-light of the holo-projector below the shattered windshield, and the flickering red and green QLEDs⁵⁶ of the other electronic and photonic systems under the caving roof, even her own aging eyes are able to make out the shapes of the surrounding shadows.

“Helga earned her title,” Athie charges on, brushing her fingers across one spear of fractured pavement after another, “and she deserves a better end than this... So we ought to give her one... But first we need to rescue our oxygen reserves... and our water extractor⁵⁷... and our microbiosphere⁵⁸... and our q-units... and our radars... and our—”

Mollie gasps, as William leaps up and catches her daughter before she altogether tumbles face-first into swamp muck.

“Will do, Fireball,” he utters, returning her backside to the pavement. “But you need to sit this one out.”

Athie attempts to huff at him.

Then all of them freeze, as the feeble beeping of an alarm slices through the hushed hum of sleepless insects all around them like a bullet through a vacuum.

“Forget it, Gator,” Athie murmurs, lifting her chin towards Helga. “We need all hands on deck right now.”

The stranger furrows her brow, meeting Mollie’s almost-anxious eyes.

⁵⁶ (Savage 2009)

⁵⁷ (Evich, et al. 2011)

⁵⁸ (University of Arizona 2016)

“Our radars detected something,” Mollie whispers, and the stranger drops her gaze, a shade of apprehension darkening her suddenly perplexed expression.

“Ben!” Athie shouts, and Benjamin almost—almost—begins to lower his hands away from his ears. “How long do we have?”

“No more than twelve minutes.” His half-audible and less-than-intelligible response is almost immediate. Mollie does not doubt that the estimate is perfect; she expects the figure even takes into account a certain reduction in signal-to-noise ratio, and thus in detectable range, that must have resulted from impact-and-water damage to the systems—amazing.

“Fuck!” William grunts, his eyes scanning the darkness with a desperate sort of urgency.

Athie bites her lip. “Um,” she utters, gesturing towards Helga as if she were attempting to point at the stranger. “Twelve minutes is time enough for an uninjured person with a functional vehicle to escape...”

William begins to pace about the pavement. “Bess!” he shouts. Mollie notices a subtle hint of terror in his otherwise gruff and steely voice—she, too, has yet to see or even hear his St. Bernard since regaining consciousness after their crash, and she knows just how much that big, old, slobber-mouthed dog means to him, to Athie, to Ben, even to her.

“Or time enough for a few banged-up Brains and a drowned vehicle to be saved,” the stranger mutters, her words soft, edged with a semblance of regret, yet decisive.

Athie starts, her sightless eyes bright with ideas. “In that case... We have ten and half minutes left to arm ourselves and disappear.”

“Bess!”

“Mom,” Athie barks, dipping her legs into swamp muck. “Shut us down—no lights, no transmissions—nothing that can be seen, intercepted, or hacked⁵⁹.”

Mollie nods, scrambling as fast as her old bones can manage to move towards the half-hinged door to the driver seat.

The distant agonized screams of a dozen speeding engines—petroleum-powered hybrids—suddenly breaches the strained quiet surrounding them, although the vehicles themselves have yet to appear on the black horizon. Mollie feels her pulse quicken. *‘Only one gang in these parts boasts enough power to flaunt that many engines...’*

“Bess!” Will shouts, more than a hint of terror in his voice now.

“Ben,” Athie continues, her voice a bit more urgent now. “Help me over to Helga.”

Gritting her teeth, Mollie squirms into what remains of the driver seat. “Tool bag in the back seat,” she gasps, glancing back at the stranger. “Toss it up to me?”

The stranger nods. “One sec—Hey, Will!”

William freezes, his fists clenched as tight as his jaw.

“Catch!”

William whirls around, as the stranger launches a pair of handgun-size firearms towards him from the holsters strapped around her thighs. His eyes immediately latch on to the projectiles,

⁵⁹ (Wang and Sawhney 2014)

and, in spite of the lacking light and the awkward shapes, his hands easily meet the two of them above his head and grip them good and tight.

Mollie almost chuckles to herself. “Perhaps there is some truth in all his tales about turning down a contract with the Miami Marlins,” she murmurs.

“Thing in your left hand is a microgrenade launcher^{60,61}—blows through bullet-proof glass and fortified tires like nothing—magazine holds eight rounds, so use it well,” the stranger states, as William adjusts his grip on her weapons. “Longer we avoid confrontation with those engines, better our chances are going to be. Thing in your right hand is a laser-flare ejector⁶²—burns bright enough to fry a human retina up to fifty yards out—magazine holds five rounds, but limit yourself to a single shot so we can all see whether or not we manage to survive this.”

Mollie returns her attention to the half-illuminated assortment of emergency backup power devices—capacitors, batteries, photoelectric converters⁶³—mounted across the optical-fiber-stripped ceiling of Helga.

“And—do us all a favor—forget about Bess for a minute,” the stranger hisses.

“Why?” William snarls, tightening his grip on the microgrenade launcher, holding his ground.

Mollie reaches towards their vehicle q-unit, a quantum computer that serves as the interface between themselves and the dashboard holo-projector, the internal vehicle electronic control units, the CAN bus, and (on rare occasions under exceptional circumstances) other vehicles.

The ominous rumble of the fast-approaching engines grows louder, as a long, thin, bouncing beam of electric light appears at the base of the northern horizon. Mollie feels her stomach writhe, as she glances at Helga, at Athie, at Benjamin, at William, at the stranger. *I hope we have a chance against them.*

“Because all of us walk away from here in one piece if we work together right now, and all of us die if we don’t,” the stranger replies to William. Then she ducks into the back seat of Helga.

“Bess will be okay, Gator,” Athie utters, her voice gentler than before. “She always is.”

William glares at the ground for a moment more before trudging over to Benjamin. “You heard her, Genius.” He nudges Benjamin towards the edge of the pavement with the toes of his combat boots, and Benjamin leaps to his feet, more so to escape the Wrath of William than to rescue Athie.

“Thanks,” Athie says, as Benjamin appears at her side and guides her back on to her feet.

Mollie shuts down their q-unit, cutting power to the holo-projector, the radar systems, and the vast majority of the QLEDs within Helga. Then she begins to locate her other targets—connections from power supplies to fiber-optics components—and notes how to sever each of them.

The stranger tosses the tool bag over the center console and into the front seat.

⁶⁰ (Kelion 2015)

⁶¹ (Orbital ATK Inc 2016)

⁶² (Extance 2015)

⁶³ (Jin, Zeng and Wang 2011)

“Thank-you, dear,” Mollie utters, snatching up the tools. She positions herself between the dashboard and the passenger seat and sets to work.

“What else do you need?” the stranger grunts, squirming back out of Helga and twisting herself towards Athie.

“Casper,” Athie replies, half-following, half-towing Benjamin through swamp muck. “Ben uses Casper to hack into clunker cars.”

“Casper?” the stranger inquires.

“The q-unit connected to the holo-projector,” Athie explains. “It works like a charm when infiltrating telematics systems. All in-vehicle networks in clunker cars are interconnected, so he only has to hack into one to take over everything⁶⁴.”

The stranger nods and faces Helga again.

Meeting her determined lavender eyes, Mollie maneuvers on to the passenger seat. “Hop in, dear.”

The stranger obeys.

Mollie continues to claw at the fiber-optics components, severing each connection in turn, as the residual hum of speeding electrons and photons begins to disappear, and the lights of all the QLEDs begin to blink out. *‘Almost done,’* she thinks. *‘Almost done now.’*

“The holo-projector is attached to the q-unit through a port on the bottom right of the thumbprint scanner,” Athie begins.

“Yep,” the stranger utters, fingering the port in less than a heartbeat in spite of the now-oppressive darkness.

“Pull the adapter straight down.”

“Yep.”

“Now detach the q-unit from the dashboard-side of the holo-projector—slide it up then out to you.”

“Yep.”

Mollie hears little more than engines—engines and Athie—engines and Athie and the stranger. The sounds swirl about her mind, compelling her fingers to work faster and faster until, at last, the interior of Helga is as black as the road—invisible to an unenhanced human eye. Mollie sighs at her handiwork, staring into the dark depths of her sunken home, wondering how much of it—if anything at all—can be salvaged after the engines pass.

Then she clambers out of Helga, attempts to dry her mud-caked hands on her sopping shirt, and grimaces at that snarling swarm of armed motorcycles and armored passenger cars beyond. *‘Much too close for comfort now...’*

⁶⁴ (Zhang, Antunes and Aggarwal 2014)

[EARTH;; Maybe-Mistake]

Nellie slides out of their vehicle and hands their Casper q-unit—rucksack-sized quantum computer comprised of fiber-optic circuits⁶⁵ powered with a lithium-air⁶⁶ battery and a photon generator—to that STEM-Head wreck they have been calling Ben. He cradles it in his arms like a newborn and mutters a quiet thanks before sloshing back to the road, never once looking her in the eye.

“Time?” that blind girl named Athie asks, as Nellie clamps a hand around her wrist.

“Sixty-seven seconds, Athie.”

Nellie furrows her brow at Ben. “How...?”

“He counts,” Athie explains. “Numbers help him keep his cool.”

Nellie nods, wrapping her free hand around her other hunting handgun—she had programmed her ammo spitters to close bullets into these cartridges. The blood-curdling scream of those damned engines chases a haunting montage of midnight darkness—machine gun fire—manic motion—desperate shrieks—leering eyes and death-black ravens in five-branch stars—around and around and around inside of her head, and she remembers that name—*panic*—that name that has never once failed to send a marrow-chilling shiver down her spine since the First Ordeal before the Whole Ordeal.

Nellie shakes her head shuts her eyes—one minute...

“Shit!”

Her own voice—too loud for this time of night. Her own hands jerking their steering wheel while switching off their low-beam lights—too late. Her bionic excuse-for-a-pair-of-legs increasing pressure on their accelerator.

“What happened?”

Jack’s voice—groggy, slow and slurred, more or less a byproduct of his unconscious mind, but much too relevant to be considered part of another one of his adorable somniloquies.

“Snap out of it, Nellie, and just wake him up!”

Her own voice again—terse mutter through gritted teeth. She has no desire to disturb him right now, but she needs him to be conscious—she needs him to...

“No.”

Nellie removes her right hand from their steering wheel and pats her right hip, her left hip, then each of her thighs.

“SHIT!”

Jack shifts beside her, his eyelids sort of fluttering.

Nellie huffs at herself and tears her eyes away from his face—so peaceful, so understanding, so handsome, so kind. She glares through her night-vision lenses at that fog-

⁶⁵ (Tomita and Nakamura 2013)

⁶⁶ (Trowbridge 2015)

shrouded mess of busted-up pavement and pot holes and rust-crumpled road signs for Richmond, Virginia, and another caved-in overpass up ahead.

Her best firearm is in pieces across their back seat, waiting to be cleaned out and reloaded with a magazine of ten new microgrenades (all of which still need to be spit up), not locked in its holster on her left leg, ready to be fired... She needs Jack to...

"No!"

"You talking to yourself again?"

Jack's voice—not slurred and groggy anymore...

Nellie gulps.

"No."

Her own voice—not at all convincing. She feels his all-too-knowing smile brush her cheek, and her heart sort of flutters, and her palms start to sweat, and her mind blanks.

He stifles a yawn.

"You mean to wake me up for something, or am I just... up?"

Nellie presses her lips together, as Jack stretches his arms up over his head... She notices his arm and shoulder muscles flex.

"Mind giving me a job anyway? Nell?"

She glances at their back seat through their rearview mirror.

"We got company."

Her whisper... His nod.

Jack's smile vanishes, and, all of a sudden, her cleaning kit is in his lap, her microgrenade launcher is cradled in his palms, and her ammo spitters are laser-melting layers of metal together to spit up those microgrenades.

"Just tell me how to do it, and I'll get it done."

His murmur... Her nod.

And then they hear that low, hair-raising hum over head—just for a second—but even half a heartbeat is long enough for those drones to get a good look at them.

"Sembradores."

Jack calls them Sembradores—most desperate of Desperates—ruthless dealers of death and rulers of darkness who take whatever the heck they want then destroy everything and everyone they do not need—shadow armies with battalions of rust-bumpered clunker-cars that move in fearsome AI-dictated formations and attack as much with speed as with precision—undefeated champions of mind games and war.

Nellie shudders at that name—panic...

The rest of that night was a blur of battle blasts and sniper shots—but she remembers glimpsing Jack at one point, her fingers groping for another handful of cartridges for her rifle, her other wrist screaming in pain and spewing blood like lava from an exploding volcano. She remembers his unblinking emerald eyes, how her microgrenade launcher was clamped between

his hands and locked in on his target—BOOM—how another one of those clunker cars burst apart in his wake.

She remembers her own half-swallowed grunt of frustration and agony, his gaze—wide-eyed and worried and calm and confident all at once—aligning with hers... All of a sudden, her microgrenade launcher was sliding on to their passenger seat, and his hands—warm and gentle and soft and adept—were cradling her wounded arm while tearing a strip of cotton cloth from his own t-shirt and knotting a tourniquet around her elbow.

Then a blink and a boom and another sunrise—pale and pink and perfect—and a wisp of dark smoke billowing up far behind...

She remembers a click, too, like a safety switching off, because, at sundown, she still had her ammunition and her spitters and more than half of her firearms under biometric-match locks that recognized her retina and irises alone, and before that distant rumble of stampeding clunker-cars shook him awake, she refused to let him touch more than just that .22 LR handgun she keeps loaded up with blanks. But, after those drones showed up, she was teaching him how to wield her microgrenade launcher...

Trust.

Stranger than a stranger to her back then, when doubt was still her best excuse for a friend, and every move she made with Jack was another maybe-mistake...

Nellie shakes her head again—here she is, a million and one maybe-mistakes later, still questioning her own odds of survival and chiding herself in silence for, once again, disregarding her own unwritten guide to safe travel—one minute... but not her last minute.

[EARTH;; Something on the Other Side]

Ben cradles Casper in his lap, as his fingers race across the touchscreen, adding 34, 35, 36, 37 more lines of code to his best in-vehicle network infiltration program—done—compile—run—error: network access denied.

“Again,” he utters over the quiet hum of Casper and the deafening scream of speeding engines now less than 26 seconds up the interstate. He forces his fingers to move even faster.

“Again?” Mollie snaps, adjusting her grip on an Athie-Gun, glancing from the engines to the touchscreen to the engines...

Will appears above his right shoulder and peers down at the standard output displayed across the top half of the touchscreen, his brow furrowed deep and dark. “What the fuck is going on with these clunker cars, Genius?”

“Something on the other side,” he rushes, panic evident in his every word. 38, 39, 40—done—compile—run—network access granted—error: network access denied. “Again.”

He modifies 3 more lines of code—done—compile—run—network access granted.

He freezes, fingers hovering above the touchscreen, waiting...

Error: network access denied.

“Again,” he repeats, his voice somehow even smaller and squeakier than before.

“What the fuck, Ben?”

“Please, William!” Mollie exclaims.

“Breathe,” Athie murmurs. “Remember to breathe—in deep, out slow.”

Ben forces his lungs to exhale. “Something on the other side, Athie,” he whispers. “Something fast.”

“AI⁶⁷,” the stranger states, looming over his left shoulder. “Mind if I—?”

BANG—BANG—BANG—BANG—BANG!

Bullets blast through bits of rock and road all around them, as Mollie and Will flatten themselves against the pavement, and the stranger tackles Athie to the ground, and Ben shields Casper from the onslaught, typing furiously all the while.

“Ben—now!” Athie gasps, as the screeches of two dozen tires batter his ears—18 seconds to Checkmate. “Get them out of here now!”

BANG—BANG—BANG!

More bullets and then slamming doors and shuffling feet and shouting—compile—run—network access granted.

No error.

“In!” he exclaims.

BANG—BANG—BANG—BANG—BANG!

Agonized gasping and a soothing murmur, and then a shriek of pain over more shouting and shuffling and slamming—11 seconds to Checkmate.

“Ben—now!” Athie shrieks.

⁶⁷ (Kelemen, Romportl and Zackova 2013)

10...

'Not enough time,' Ben thinks. He stops breathing. *'Unless...'*

But he knows Mollie had once dubbed it the Never Ever Plan for a very good reason; everything about it is evil in every way... Except right now it is the only thing that can save them, because it is the only program he and Casper can execute in 6 seconds. He forces himself to regurgitate the word: "Sparks?"

9...

Will turns to Mollie. "Sparks—or microgrenades—or our lives instead of theirs."

8...

Stampede of combat boots on torn-up pavement.

7...

"Sparks," Mollie chokes, her cheeks as white as her widened eyes.

Ben types up the command—enter—BOOM!

[Mars;; 3]

Everything is a blurry haze—white and an unnaturally sickly greenish brown.

Then she moves her wrist, and, with a click, everything snaps into focus under her microscope. The alien bacteria show clear signs of life, although their biology is nothing she remembers studying back on Earth. Their existence has been known to Fiona and the others for a few years now.

She figures something to do with their biology enables them to inhabit their harsh environment of rust-colored salt flats⁶⁸. Fiona tries to explain her theories every now and again about why the bacteria have been so active lately, but no one wants to listen. All of them are too busy casting their eyes towards the ground and conserving as much food and water and oxygen as possible by spending more time in the Simulation.

Some of them, like Kirkpatrick, understand the worth of her findings. They'd be able to use so many of their damaged machines again once they stopped the bacteria from getting in and gunking up the inner workings, especially of their Tourmalines.

Fiona pulls back from the microscope, and her hands reach for the keyplane. The computer wheezes to life, slow from disuse. As her fingers slide across the keyplane, adding more to the database of their knowledge about the microscopic creatures, Fiona's mind wanders elsewhere.

"Imagine," she says to the otherwise empty room. "Imagine how wonderful something like this would have seemed forty years ago."

The only response she gets is a sigh from the machine that makes sure the lab doesn't start running out of air. She decides to take that as an answer.

"Living, methane-producing bacteria on Mars⁶⁹. Something like this would have driven ground control absolutely crazy."

Fiona pauses and rubs her cheek, as she reads over what she's been typing. It's the same thing she types every single time, the same report over and over, doomed as usual to meet a closed off connection on Earth. Every channel to people who care about their mission has been shut for years. Who knows what the world is like down there? Who knows what might be going on?

The younger people on the settlement sometimes talk—mostly among themselves—about how the world they left behind was nothing like the world of the settlement. She's heard them describe technology that long surpasses her memories of how everything worked on Earth. She's also caught them whispering about riots over resources, fascist uprisings, attacks on First Mars and other space companies. She's even heard them mutter about how they'd been too enamored by thoughts of living in space and making their mark on Mars to realize how quickly things can become outdated up here.

One of the new robots that had been sent up with them had been given a name. For several months Fiona had almost been convinced that it wasn't a machine but another person speaking to her through a metal body.

⁶⁸ (Norwich BioScience Institutes 2012)

⁶⁹ (Billings 2014)

I happen to know that this particular robot understands far beyond what its counterparts up here have been programmed to process and comprehend. It's hardcoded to do maintenance on itself and on their crucial life machinery, which has always made Fiona more comfortable than having Anikka do it, but something about this particular robot still rubs her the wrong way.

The way it peers around, like a human child.

Searching for something.

Looking at everything like it can recognize, register, comprehend, and see.

A shudder goes up her spine, and her hands slam against the desk. Then Fiona realizes that it has blue eyes, and she presses down on her metal work surface. It feels colder than usual, but she doesn't know if it's because something is broken or if it's because her hands are shaking, and her temperature is running higher than normal, as she panics and tries to figure out what to do.

I wonder if she can sense its presence, if she knows how often this particular robot makes an effort to repair things within her lab and her living quarters, too intrigued by the crazy complexity of her mind to detain itself in more pedestrian places. In any case, I know the woman is sure of one thing:

In this situation, she can neither fight nor run. She is trapped.

[EARTH;; Blind to Blood]

Rock—jagged shards of pavement—stabbing at her back and gnawing on her neck like gator teeth—*Florida...*

“ASCII, Athie.”

Ben’s voice—but almost seven years younger, and well before puberty.

Silence.

Then her eyebrows begin to furrow above her freckled nose.

“Two... eight... full stop... five... nine... degree sign... capital ‘N’... space... eight... zero... full stop... six... six... degree sign... capital ‘W’.”

Ben’s voice again—his face wrought with concentration, his eyes aglow with all two-hundred and fifty-six characters alongside their binary, hex, and decimal codes.

Another glance at frozen time—four crumpled sheets of number-specked, ink-blotted, coffee-stained non-electronic-GUI called paper that her father had abandoned amidst a mess of data disks and hand-held holo-projectors on top of his workbench during his final day in the lab—and then it hits her:

“Oh! ASCII!”

Her own voice this time. Then her legs are launching her into a loop of leaping madness, and her arms are waving all four pages around above her head like a victory flag.

“It’s a list! He left us a list! He left us a list of latitude and longitude coordinates coded in hex!”

“What...?”

Mollie’s voice—groggy and goaded.

Athie’s legs and arms freeze stiff and still that instant. She realizes that she has been shouting too loud and too close to Helga, where Mollie is supposed to be asleep.

“Sorry...”

A half-smile creeps across Ben’s lips.

Then that first pair of coordinates flutters about her mind—28.59°N, 80.66°W—until she pinpoints the place...

Athie blinks her eyes again and again and again, but she sees nothing. She inhales, and the stench of burning gasoline and smoldering flesh inundates her nose and throat; she battles an urge to gag. That splitting ache and insufferable throbbing in her head have made her worse than nauseous since the crash, and, though she is sure that she is prone at the moment and just as certain that the pavement is solid and still, she senses a violent spinning. Some part of her seems to think she is not alone, but she hears little more than a fearsome crackle of violent flames. Then a feeble whimper bubbles up beside her, and she remembers the stranger.

But she does not move—she must not move until...

“Checkmate.”

Ben's voice—calm, almost confident, but quiet.

Athie knows to trust his judgement on the all-clear. Gritting her teeth, she lifts her back away from the pavement, rolls on to her right side, and gropes for contact with the stranger. Her hands collide with a warm semi-solid, and another whimper reaches her ears.

Her ten hesitant fingers hover in radiated body heat.

Then three of them make contact with soft cotton fibers soaked in something too warm and wet to be swamp muck alone.

“Mom!” she shouts—her voice is frantic, almost unfamiliar—not because she feels the blood but because she cannot see the bleeding. “Mom!”

Swift pounding on pavement.

“Athie!”

Mollie's voice—breathless and plagued by panic.

“What—?”

“She's bleeding,” Athie rushes. “Where is she bleeding—why is she bleeding—?”

Silence.

“Mom?”

“She was shot...”

Athie feels her heart begin to race, as Mollie nudges her aside. “What about Ben? Will?”

“Fine,” Mollie grunts.

Athie nods; she knows there is nothing right now that she can do to help.

[EARTH;; Salvage Time]

Mollie presses her palm over the wound, and she feels the stranger—no longer conscious now—shudder beneath her.

“William, get over here!” she barks, touching the tips of her clean first and second fingers to the flesh above the stranger’s carotid artery. Sighing with a sort of relief at the presence of a feeble pulse, she shifts her hand towards the stranger’s nose and mouth and almost smiles at the tickle of breath.

William clears his throat, and Mollie glances behind her.

“What the fuck are we going to do, Mollie?” he mutters, smearing a trickle of blood across his forehead in attempt to mop his sweat-sheened brow.

Mollie notices her own singed and scraped up skin and closes her eyes.

“Ben thinks she’s right about that AI,” William continues, stepping over the stranger and glaring through the pre-dawn haze at her blood-soaked shirt. “But I don’t trust her.”

“We don’t have to trust her,” Athie murmurs. “But we do have to bring her with us.”

William scoffs. “Why?”

Athie narrows her sightless eyes. “Because—”

“Open your goddamned eyes, Athie!” William snarls. “She’s got three bullets in her chest, and she’s almost lost enough blood to be dead! She’s fucking useless to us now! We’d just be wasting our own resources—our own fucking lack of resources—in attempt to keep her alive! Our best option right now is to salvage some of our stuff, jack her shit, and get the fuck out of here before that AI sends another wave of engines after us.”

“You selfish, stone-hearted, good-for-nothing jerk!” Athie spits, her teeth clenched as tight as her fists. “My eyes are open—and I see as clear as you that we all would have drowned dead inside of Helga without her help!”

Mollie sets her jaw, staring at her livid daughter, wishing William’s words were somehow further from the truth. “She is going to come with us, and that is that.”

William folds his arms across his chest and shakes his head at the stranger.

“Bring her over to her vehicle—I want to clean up these wounds before she loses too much more blood,” Mollie orders.

William does not move.

“Now,” Mollie growls, “else her first meal comes out of your ration.”

William sets his jaw. Then, with a grudging roll of his eyes, he scoops the stranger up into his arms and trudges towards the passenger-side door of her bullet-battered repurposed military vehicle.

Mollie helps her daughter to her feet and follows him, a shade of regret haunting her otherwise steadfast disposition. “And then retrieve our medical kit from Helga.”

William grumbles some sort of profane retort under his breath, and Mollie shakes her head at his back—sometimes she wishes that he were more like Benjamin.

.

Following too long a struggle to remove a graphene vest⁷⁰, three bullet dislodgements from two shattered clavicles, a saline flush, fifteen stitches, and an injection of antibiotics, Mollie offers a nod of satisfaction to her handiwork and removes herself from the stranger's vehicle, leaving Benjamin curled up and fast asleep in the driver seat and Athie seated on the hood, twiddling her thumbs. Then, with an almost-anxious glance towards the lightening eastern horizon, she hurries back to Helga.

"Thank-you, William," she utters, frowning at the sopping stack of electronic and photonic equipment now slumping on the side of the interstate.

William drops another armful of parts on top of the stack and heaves a sigh of disgust. "This here is everything that seems worth our time and effort to fix up and keep with us."

Mollie raises an eyebrow at him.

"I even dragged the radar transmitter-receiver unit over," William continues, as if he were expecting her to approve of his efforts and relieve him from duty. "If you want the antennas, then you can take care of them yourself."

"I will... while you test everything else to figure out what still works, what has to be fixed, and what we need to acquire in order to fix everything that has to be fixed."

William glares at her.

"Please, William," Mollie adds. "Athie can assist you."

William sighs, offering her an expressive roll of his eyes before stalking towards the stranger's vehicle. "Off your ass, Fireball—I have a job for you."

Mollie sighs, shaking her head at him. *'Nothing to be done.'* Then she hoists herself up on to the roof and grimaces at the states of the radar antennas. She runs her fingers along the gnarled waveguide of their primary surveillance radar. "We might need to replace you this time around," she mutters. Then she turns to the dinged-up parabolic reflector on her opposite side. "And you."

Shooting a final anxious glance at the expanse of pale blue now beginning to claw its way up the starless black sky, she begins to deconstruct the radar antennas as she once taught her daughter to over fourteen years before...

"What does this one do?" Athie asks, pointing towards a large, concave mesh of metal mounted half a foot above the carbon fiber roof^{71, 72}.

She smiles, guiding the adjustable wrench in her ten-year-old's right hand towards the base of the paraboloid⁷³. "Take a guess."

"Is it an antenna?"

"Yes."

"So is it a transmitter and a receiver, too?"

⁷⁰ (Shang and Wang 2012)

⁷¹ (Brandon 2013)

⁷² (Seamans 2008)

⁷³ (Wolff n.d.)

“Yes.”

Athie contemplates the paraboloid for a moment. “And it spins all the way around?”

“Yes.”

Athie cocks her head, tracing the main axis of propagation towards the twilit New York City skyline. “This one detects things and then tracks them.”

She nods. “What kind of things?”

Athie furrows her brow. “Ground vehicles... I think.”

She nods again, grinning at her daughter. “Yes.”

Athie smiles. “So what are we going to do to it?”

Tightening the wrench around a bolt on the antenna pedestal, she directs Athie to turn both to the left. “See all these dents and dings in the mesh of the secondary radiator⁷⁴? They prevent the antenna from reflecting electromagnetic waves only along its main axis and generating a narrow beam. Right now, our azimuth and elevation angles are too big, so our gain along the axis of propagation is too small, and the signal-to-noise ratio of our received echoes is too low to detect or track much of anything. So first we are going to remove the antenna, and then we are going to fix it up with a few strips of that metal we came across yesterday.”

Athie nods then points to a smaller fixture mounted just above the windshield. “What about that one?”

“That one is our LiDAR.”

“Oh! The LiDAR⁷⁵ transmits and receives waves in the visible light band instead of in the X band, right?”

“Yes. We use it to detect objects all around us at night so that we can drive with the headlights off.”

Athie nods again then points to a similar fixture mounted on the rear end of the roof. “And what about this one?”

“This one is our infrared imaging camera.”

“Oh! We use this one to see people after dark and warn us about surprise attacks while we sleep, right?”

“Yes.”

“I like this one,” Athie states. “What about that other antenna? What does that one do?”

She raises an eyebrow, and Athie traces the main axis of propagation towards the darkening sky.

“Drones,” Athie utters. “We detect and track drones with that one.”

A deep woof and a curse of delight jolt Mollie back to the present. She scans the dark sky, but, of course, she sees nothing—everything about her utter lack of awareness of their surroundings is tormenting her like madness now.

⁷⁴ Ibid

⁷⁵ (Duh n.d.)

“Bess!” William cries, sprinting towards the bounding St. Bernard and enveloping her muck-covered body in his embrace. “Thank the universe...”

The dog greets him with a tongueful of slobber, wagging her enormous tail with enough vigor to shake her entire backside and move most of William along with it. He laughs aloud, a flicker of forgotten youth filling his eyes for a single, precious, fleeting moment. *‘The good times never seem to last.’*

“We need to get going now,” she mutters to herself. Helga droops like a dried up daisy beneath her, and she sighs. “I wish you could come with us, too.”

She soon detaches the last of the fixtures from the roof, beckons William over, and lowers the first fixable-enough-to-still-be-functional radar antenna into his arms. One by one, she clears the roof of surveillance equipment until, at last, her own being is the only item left to take down. Then she and William clip the remains of their radars to the roof of the stranger’s vehicle, load both their own meager remnants of usable supplies and her vast stock of scrap material and spare parts into the already-teeming, trunk-like, rear compartment, move Benjamin—without waking him—into the back on the driver side, and guide Athie on to the drive train beside him.

Mollie opens the driver side door and rests her head against its composite frame. Her eyelids droop shut, and she allows herself a brief moment to breathe. “How much water do we have left in the extractor?”

“Not enough,” William grunts.

Mollie sighs. “Bottle up a... quarter ration... for each of us.”

William hesitates.

“Six,” Mollie offers before he even asks. “Six quarter rations total.”

He nods and rummages through the teeming rear compartment for something, perhaps their canteens, perhaps the spigot-side of their water extractor.

“And how much food do we have left in the microbiosphere?”

“Um...” William begins.

He never bothers to finish his thought.

Mollie sighs again, contemplating the road ahead of them. She expects that the final stretch to KSC will have to be traversed on foot, which means that the runners will each require an extra two rations of calories to sustain them, which means that the rest of them will each have to forgo... Too much... “Pack six full rations of food for us before you close the trunk, and store them within reach of your seat.”

“Will do,” William utters.

“Thank-you.”

With a final glance at Helga and a few silent, unceremonious goodbyes to their beloved mobile home, Mollie settles herself into the driver seat of the stranger’s vehicle. She hears the rear hatch thud closed. Then William slides into the back on the passenger side and slams the door shut, allowing Bess to sprawl across both him and Athie. Mollie starts up the hydrogen-powered electric motor⁷⁶ and attempts to adjust to the massive size and strangeness of the vehicle. William offers

⁷⁶ (U.S. Department of Energy n.d.)

her a canteen, and, a single conservative sip of water later, she pulls the vehicle on to the interstate and accelerates north.

[earth;; Hyperloop]

The Washington Monument stands tall in the middle of her view.

Farea sits on the steps of the Lincoln Memorial, looking towards the giant obelisk. She notices a few jagged cracks and several crumbling bricks here or there, but it is still in better shape than most structures in D.C., perhaps one of the few things here that remain from the past. She likes what she sees well enough, but it is nothing compared to old pictures. The white and clean steps on which a black man once gave a speech about freedom are now grey and filthy. The long pool that once reflected a beautiful blue in its glass-like water is now home to dust and dead branches. Most trees, despite basking in summer-like spring, are bare and grim. Their naked boughs reach towards the sun, seeming to beg for help from beings who live up in the sky.

Farea has heard stories about a group of people who, after every meal, would try to touch the sky in search of an extraterrestrial aid. Maybe a hand from the people who were sent to Mars a long time ago. But after the Collapse happened, no one has heard about anyone on Mars. Some say furiously that all of them live in paradise up there and have forgotten about their fellow humans down on Earth. Others say that all of them have died. Overall, their theories agree on one thing: All of the people on Mars are in a better place than everyone else on Earth.

'I can't believe how many things have changed in less than a decade,' she thinks. 'Everything that technology has brought us seems... like a dream.'

From time to time, Farea sees groups of people walking around. None of them seem to notice her, as they cross the Mall. Most of them, filthy and wearing rags, seem to trudge along the same trajectory every day, out and about on a hunt for a bite to eat and something clean to drink then back to their homes. If she were to go fifty years into the past and mention this to the average American, the person would think she was describing an arid land in Africa⁷⁷. But no, this is the United States of America, a land where drinkable water and—of all things—food are scarce.

"Hey, there you are," says Arine behind her.

Farea turns around and sees a completely different person from yesterday. Instead of the marine coat, she is wearing a black T-shirt and khaki pants. She is carrying a brown backpack, which does not seem to be holding anything in it.

"Don't you think that it's too hot for long pants?" Farea asks while grabbing her own white shorts.

"Nah, just in case it gets cold!" Arine says while going down the stairs and joining Farea.

Both of them sit side-by-side, looking towards the distant eastern horizon.

"You know, I was waiting up there for about fifteen minutes..." Arine says to break the silence.

"I'm sorry, but you know what memories await me up there."

Six months ago, Farea had come to D.C. after maiming the only friend she still trusted. It was a horrible experience, and she needed to leave. Her journey was long. She walked all the way,

⁷⁷ (Gender and Water Network 2003)

in spite of the occasional car stopping to offer her help. Hungry and tired, she began to wander around Washington, but she could not find anything to eat. She decided to walk through the Mall, and she sat on Lincoln's foot. She was out of energy and felt hopeless, weak, hungry, despairing... she was unable to move, so she lay down on his foot. She thought everything was over... Until Arine came and helped her.

"That day... what were you doing here?" Farea asks Arine.

"The day I found you?"

Farea nods.

"Well... I met Luze, and I was walking back. I didn't have anything else to do, and I wasn't ready to call it a day, so I went to see the Lincoln Memorial. The inscription always makes me think about something. So I came here, and that's how I met you."

Farea looks at Arine. Without the hat, her hair cascading down over her shoulders seems more natural.

'I guess luck sometimes comes in handy,' she thinks to herself.

They sit in silence. Several sparrows fly down and start to skip in front of Farea. If she had bread, she might have thrown some to them and maybe befriended one. She knows that it is wrong to squander resources⁷⁸ like that, but for the sake of killing time it would have been a very nice thing to do.

"If everything was not like it is, what would you have done with your life?" Farea asks.

Arine takes her time to reply to the question.

"Well... when I was young, I wanted to become a writer. I had a lot of imagination back then, but I lost it over time. I don't know why, but when I went to school, I started looking at the world in a realistic and rational manner^{79,80}. Every time I tried to be creative, I would be turned down so hard that I got scared of trying new things... Anyways, how about you?" Arine asks.

Farea shrugs. "I don't know. Maybe be a world tour guide for Aliens, since Space travel used to be a thing," she says, chuckling. Then she blushes slightly and tucks her head in between her legs. It was a foolish dream.

Arine laughs. "World tour guide? That's something else!"

Farea glances up at Arine, and both of them begin to giggle. They laugh for a while, long enough for small tears to come out from Farea's eyes. The sparrows, scared of the sudden ruckus, fly to some quieter location. Their laughter soon fades, and silence begins to reign once again.

"Do you think that there are actually living creatures up there, in space?" Farea suddenly asks Arine.

Arine does not reply. She remains quiet, looking at the horizon.

"I didn't believe so until yesterday, when I saw the vials. Now, I'm not sure at all."

Farea looks at her, confused.

"Yesterday's vials?"

⁷⁸ (The Human Society of the United States n.d.)

⁷⁹ (Sommer 2014)

⁸⁰ (Robinson 2006)

Arine nods.

“Di-water is not common, especially these days. But you can make hydrogen out of plain di-water⁸¹. And do you know what you can make out of hydrogen?”

Farea does not have a single clue. She lets silence reply for her.

“Rockets,” Arine states. “The old space programs used to launch rockets to space with hydrogen.”

Farea scrunches up her face in confusion. But then everything starts to click.

“Are we trying to breach into space?” she asks.

Arine looks at her. “Yes. I was told that there’s a paradise up there, next to the stars, far beyond this planet, where everything is beautiful, and you don’t need to worry about food, or shelter, or boredom. That’s what operation RP is all about. Reach Paradise.”

“Is Paradise... Mars?”

Arine sighs. “Yes.”

They sit in silence. This new information comes in so brutally that Farea needs a bit of time to digest it. So the goal of the Sembradores is to reach Mars. Is their plan to leave this degraded planet and live in comfort? Or is it to take revenge on the people there for leaving them behind?

“Rumors are true, then,” she says. “People still live up there.”

Arine looks at her.

“That’s why I’m not sure. I’ve heard stories of people going there. But even if they reached their destination, they’re probably dead now. Nothing has been sent from Earth in years! How can you live in a place where nothing grows without any kind of aid?”

Arine has a good point. Even with modern technology, how can people there survive without regular deliveries of food and water? Their supplies will run out eventually; they might already be out now. Farea knows how advanced technology has gotten in the last couple of decades, but was it ever enough to give a sufficient, self-sustaining source of water and food to people in space?

“If Sembradores plan to go to Mars, how will they destroy everything?”

Arine raises her shoulders.

“Not a single clue. Maybe the meeting will tell us more about it.”

“Where are we going?” Farea breaks the topic of conversation.

“We are going to Florida!” Arine enthusiastically replies.

Farea leaps up, surprised. Her eyes, wide open, look into Arine’s. Her friend’s dark brown gaze is not lying to her.

“Florida?”

“Yup! Aren’t you excited?” Arine says with a nod.

“That’s crazy! We can’t get there in time!” Farea protests. “Zetius is going to kill us!”

Arine gets up.

“Then let’s get going.”

⁸¹ (Zeng and Zhang 2010)

Arine starts to walk towards the pool. Farea, still indignant, stands still awhile before deciding to trail along.

“You know that to get to Florida it takes more than ten hours, right?” Farea protests while following Arine towards Union Station. “With all the roads that are cracked and unsafe⁸² to drive on, we won’t make it there in time!”

“Woman, chill out,” Arine says. “We’ll make it there in no time; you’ll see.”

Farea finds it hard to believe. They do not have a car, and they are heading towards a transportation hub with no working trains or buses. How else are they going to get out of here?

After a good hour of walking, they finally reach Union Station. The marble structure in the middle looks like a mud sculpture. The once vibrant grass that surrounds it is just a pile of dirt now. The three big poles out front are stripped of their flapping American flags. The station, still glowing white after all these years of non-maintenance, looks empty. Farea stops at the entrance.

“If you plan to find a train, good luck on that. I bet the rails are all rusted and bent. I’ll just wait here until you come out. I’ve searched this place before; there are only hoboes inside.”

Arine turns around and smirks. “You have a lot to learn. Just trust me.”

Arine enters, and Farea reluctantly follows.

The first time Farea came here, the place was filled with homeless people, protecting themselves from the cold. It smelled horrible, but Farea coped with it. Now, there are fewer people. All of them look filthy and desperate. Most of them, women and men, are young, perhaps in their mid-twenties. At first, no one notices them, though they are easy to distinguish. Clean clothes, muscle tone, rosy cheeks. Not just pallid skin clinging to bone. But as they walk further inside the station, more and more people begin to look at them. Farea hears whispers zipping back and forth around her, and it creeps her out. Instinctively, she catches up to Arine.

“They are talking about us,” she mutters.

The murmuring starts to get a little bit more intense. Some of them sound more like grunts of displeasure than idle chatter.

“Ignore them,” Arine says abruptly.

They make their way towards the tracks. There, a black man is leaning on an old billboard. Surprisingly, he looks very healthy, more alive and well than anyone else around here. Arine signals him by raising her arm. He replies with the same gesture.

“Hey Al. Sorry for making you come here in a hurry,” Arine says while accelerating her pace.

“No worries, Ulyss. Anything for you, of course!” he says with enthusiasm.

Both of them stand in front of him. He stands just a little bit taller than them. He is wearing a T-shirt and broken jeans, and his arms are covered with small scars. Wounds are evident on his face. Several days old, probably from a small fight.

“Why, hello there!” he says, looking at Farea. “And who do I have the pleasure...?”

“Renace... Nice to meet you,” she says with an interrogative intonation.

“Al. Pleasure is mine.”

⁸² (Pavement Interactive 2009)

Farea already likes him. She wonders how Arine got to know him.

“So... you need to take the tube?” Al asks Arine.

“Yes. If you don’t mind, of course.”

“Absolutely not!”

He leads them towards Track One.

“So... where do you want to go?” Al asks.

“Florida, the closer to Orlando, the better.”

“Hmm... I can get you to DW, if you want.”

“Even better,” she answers with a smile.

What is nice about the station is that the tracks are right at the same level as the platforms. They begin to walk on Track One. Farea scouts around and sees abandoned trains. Most of them, left to collect dust like boxes in a basement, have large drawings painted on them.

“How do you know him, Arine?” Farea asks.

“I provide rides, little woman,” Al answers. “Anyone who wants to use the tubes has to come to me!”

“So... Is anyone allowed to use them?”

“Nope. People of trust only. With guests, of course.”

“So are you a Sem...”

Arine puts a hand on her mouth. Her eyes are telling Farea, “Don’t you dare say that!”

“A what?” Al asks while turning around.

Immediately, Arine removes her hands and acts like nothing has happened.

“Are...” Farea says, briefly looking at Arine. “Are you a driver of some sort?”

“Driver? Nah. More like an engineer. Guahuahua...” His laugh is very unique. “I am the only known operator of the tubes. Everything is programing; you need to know the language if you want to use the system!”

A programmer. He must be very talented to be able to keep an entire transportation system running without wireless communications and internet.

“When you said people of trust, what did you mean?”

“People that provide me with help. Lady Ulyss gives me seeds and helps me grow food. Others give me other things.”

“That must be why she has a secret hideout,” Farea thinks, keeping her words to herself. “She needs a stock to pay for trips as needed.”

“I sent two people to DW earlier today,” Al continues. “What a coincidence!”

“Who?” Farea asks curiously.

“Don’t know their names. One of them was wearing a mask. Tall, and rude. He gives me a lot of wires that help me with the electronics.”

Zetius.

“No wonder he was carrying wires with him,” Farea thinks, recalling the meeting at the docks.

“How about the other?” Arine asks.

“Some guy I’ve never met before. He was tall, blonde. He dressed so awkwardly, but, oddly enough, he had a very nice tone and acted like a gentleman. Anyways, we are here!”

Farea looks around. The station is about sixty feet behind them now. The train tracks are delimited by rails, and tall old buildings are masking the horizon. However, nothing exists around here that would help them travel.

“Where the hell are we?” Farea asks angrily.

“Relax... We need to go underneath,” Al says while opening a hatch.

The circular hole, big enough to fit one person at the time, leads down into darkness.

“Ladies first,” Al says.

Arine steps forward first and drops down. Farea hears a small puff at the end.

“All clear!” Arine shouts.

Al motions Farea over, and she drops. After being airborne for a couple of seconds, she hits a small cushion. She sits up, taking a second to look around. Small flickering lights, embedded in the walls and ceiling, illuminate a series of tunnels. Then she climbs off and gets to her feet. Farea soon hears the thump of the hatch closing above, and Al reappears beside them.

“This way,” he says.

The tunnel, dark but visible enough to travel through without bumping into the walls, appears to be recently made. Farea can tell that the walls are made of white matter, but not marble.

“Where are we?” she asks. Her echo reverberates from both sides of the tunnel.

“We are near the tubes, my girl,” Al replies.

“I would have expected this to be attached to the station.”

“It was, but they blocked the main entrance. This is the only way to get to them now.”

They walk in silence. Their footsteps ricochet off the walls and ceiling, giving the tunnel an eerie atmosphere. The flickering lights make it seem like a scene from a horror movie. After several minutes, they finally come across a small door with a red light on top of it. Al opens it, inviting the girls to go in first.

The door serves as an entrance to a huge closed blue room. A transparent tube, around thirty feet in diameter, crosses overhead. To their left, a small staircase spirals up to the level of an inner capsule. The door to it is closed.

“What is this?” Farea asks.

“It’s a Hyperloop⁸³,” Al replies while going towards one of the ends. “Can take you to Miami in about one hour. If a Hyperloop existed across continents, it would go from New York to San Francisco in three and a half hours.”

Three and a half hours. Farea could literally take a nap and cross the country.

“That’s impressive...”

“Right? There are only two lines in the whole world. One that goes from Los Angeles to Seattle, and one from Boston to Miami. Of course, both have stops along the way.”

“How does it work?”

⁸³ (Tesla Motors n.d.)

“Vacuum. Just like in space. No drag, so you can give something a single push, and it will travel indefinitely. However, the Hyperloop is really fragile. Anything can break. Luckily, you have me, the only engineer in the world capable of running it!”

Farea inspects the tube more closely. There are no scratches on it, as if it were just built yesterday.

“How do you operate it?”

“I program the capsule to go to a certain location. If you need me, just contact me by power line communication⁸⁴.”

“Power line communication?” Farea repeats.

“Transmits data through electricity,” Arine explains. “All stations have a small device that allows operators to communicate with one another. However, since there is only one,” she says while pointing at Al, “everything passes through him.”

“Right, Arine! If you need a pass, I can send a capsule to your place.”

The Hyperloop intrigues Farea. She has seen several of its glass tubes while walking outside of towns, but she has never asked why any of them were there in the first place.

“If your destination isn’t Washington D.C., what do you do?” Farea asks aloud.

“Well,” Al says while doing something at his station. “First, you need to pay. You send your payment through the tube.” He points at a smaller tube right underneath the primary one. “Of course, it takes some time, but if it doesn’t come, then I don’t give you a ride. Fair and simple.”

Suddenly, a motor turns on and echoes through the room.

Ding.

Farea looks up. The door at the top of the staircase opens. She climbs up several steps, pokes her head towards the inner capsule, and sees two extremely comfortable seats.

“Wow. That’s cool!” she exclaims.

“I know, right?” Arine rejoins.

The inner capsule is lit a pale blue. The two seats, both with orange engravings on them, are laid down, as if they were meant to make people sleep.

“Make yourselves comfortable!” Al says.

“But wait, we haven’t...”

“Arine just payed!” Al says, holding up a small pouch. “Have fun in DW!”

Farea stands before the door, studying the capsule and the tube. Arine sneaks past her and settles into a seat.

“Are you ready or what?” she asks Arine. Farea wants to join her, but she has another question. She turns to Al and leans on the railing.

“Hey Al, can I ask you a final question?” Farea asks.

“Anything, young lady! What do you want to know?”

“How long have you been operating this thing?”

“Ever since I graduated, about twenty years ago now!”

Farea smiles at him. “I feel safe. Thank you for everything!”

⁸⁴ (Cypress Semiconductor 2011)

“Anytime, Renace. Have fun!”

Farea goes inside the capsule. The glass door of the tube closes, followed by the one of the capsule. Arine, already buckled in and reclining on her seat, has her eyes closed. Farea adjusts her seat belt and leans backwards.

“Is everyone ready?” Al asks through the interphone. “Because it’s going to be a bumpy ride.”

The capsule starts to move slowly.

“Just as a note for the newbie. You start slowly so that the acceleration doesn’t kill you. After that, it’s a piece of cake.”

“I’ll see you in one hour,” Arine says to her, and she falls straight asleep.

Farea looks around. The capsule is about to exit the room. In front of her, she sees a very small white dot. Nothing more. She leans back, trying not to worry about anything. A tingle of nervousness and excitement wells up within her, like she is a little kid on her way up to the opening drop of her first big rollercoaster. Shifting impatiently, she looks around again, expecting the walls to be dark. However, the walls are getting brighter and brighter. The small dot of light on the horizon is becoming a huge opening. The sudden increase of luminosity almost blinds her. She squints and looks back up. Her vision, blurry, reveals small patches of blue now.

The sky.

They are out.

Farea tries to fall asleep, but seeing the sky moving at such a great speed makes her dizzy.

“Hey Arine, are you awake?” Farea asks.

“Mmmmm...” she replies while turning her back on Farea.

Farea pokes her side, and Arine turns her head.

“What do you want?” she mutters, half-opening one eye.

“An hour has passed. We are getting closer.”

Arine looks away from Farea again. “Nah, just let me sleep a little bit more...” She acts as if she is on a bed.

“Come on... I want to talk about things...” Farea begs.

“What do you want to talk about?” Arine says with reluctance.

“Well, Zetius and Al.”

Arine does not bother to turn back around. “What do you want to know?”

“First off, why did you block my mouth when I was about ask Al about the Sembradores?”

“Because he hates Sembradores. They killed his wife and kidnapped his child.” Arine sighs. “Have I ever told you the story about Gurry?”

Farea instinctively shakes her head, but then she remembers that Arine is not looking at her. “Nope.”

“Gurry abducted both his wife and son, in exchange for a ransom. Of course, Al payed, but Gurry sold them anyway and refused to fulfill his part of the deal. Next time Gurry took the Hyperloop, as if nothing ever happened, Al decapitated him. Then he went to find Trance, Gurry’s partner, and delivered him the head.”

“Have the Sembradores tried to take revenge?” Farea wonders.

“From what I’ve heard, L ordered the Five to not touch him. Just let the even happen.”

“Why would L do such a thing? I thought Sembradores were ruthless.”

Arine turns around and meets her eyes. “Not all Sembradores are ruthless. But, yes, it is kind of odd for L to react the way he did. Ruthless, however, doesn’t mean stupid. Remember that Al is the only one who can control the Hyperloop. If he dies…”

“Then no one will be able to travel with it,” Farea completes the sentence.

Arine blinks slowly, a small touch to say yes.

“There you go. So why mention about Sembradores? Al is extremely smart; you’ve seen him. But he has been working for the Sembradores without knowing it.”

“Don’t you think you should tell him?”

Arine turns around.

“Why should I? It would just cause trouble for everyone.”

“But… it’s unethical, isn’t it?”

“Unethical or not, this is how it has to be. This is the world. The less you know, the better. Always remember that. People get killed for knowing things that they shouldn’t all the time.”

Farea looks at the scenery. The tube goes along the coast, giving her an incredible view of the Atlantic Ocean. There are no clouds on the horizon, and the brilliant sun irradiates a powerful beam. The light blue water is sparkling and beautiful, making Farea want to just jump in.

“How about Zetius?” Farea asks after a moment.

“What about him?” Arine grunts.

“I have never seen someone run so fast in my life. I mean, my dad used to tell me about people who could finish the hundred in nine and a half seconds.”

“Yeah, so what?”

“Well… I mean… I thought white couldn’t run that fast.”

Arine turns around, this time fully awake, though slight dark rings can be seen under her eyes. Arms crossed, her facial expression is not very accepting.

“That’s racist,” she states.

Farea, ashamed, bows her head.

“But your intuition is right. Zetius should have never been able to run the way he does.”

“Should have never? What do you mean by that?”

Arine looks down and sighs.

“You ask a lot of questions… Better answer them before you ask the wrong people…”

Arine contemplates the scenery for a bit. Farea can tell that she is recollecting all her memories about him and trying to describe him in a certain order.

“Zetius was a former runner. From what I’ve heard, he was always tall and strong, a deadly combination when running. His long legs allowed him make fewer leaps, and his strength enabled him to propel forward harder. When he was just twenty-one years old, he ran below 9.7 constantly.”

“Constantly?”

“Yes.”

“At any event?”

“That’s what ‘constantly’ means.”

Farea rolls her eyes. “I know, but doesn’t weather affect running?”

Arine nods. “Yup.” She points at a tree outside. On top, a small falcon is scouring the region for a mid-morning snack. “Eventually, the committee became extremely suspicious and started to test him for drugs.”

“So that’s how he got disqualified?”

Arine shakes her head.

“No, he didn’t. Every time he took the drug tests, he would come out clean as a stainless glass.”

Farea cocks her head a little.

“So... he retired and lived happily ever after?”

Arine looks at her.

“Will you let me finish the story?”

“Sorry,” Farea mumbles, regretting interrupting her.

“Anyways, he won several titles, very important ones. Everyone knew he was cheating somehow, but no one had proof. Suspicions are just statements without meaning if there is no proof to back them up.”

Arine opens her backpack, withdraws a small red metallic bottle, and takes a sip.

“Doctors ran more and more tests. All of them came back negative. They took a sample of his DNA, but sifting through that was like looking for a nail in a haystack.” She gestures the bottle towards Farea.

“What do you mean, ‘nail in a haystack’?” She accepts the bottle and drinks.

“Have you taken human biology? Mutations occur all the time, so, of course, DNA will slightly change every time cells reproduce. Most mutations are silent and remain that way, but if you cross-reference DNA from a past sample, you will find a lot of differences. So far so good?”

Farea nods and gives the bottle back.

“Several years passed, and Zetius’ times got shorter and shorter. From what I was told, his best was 9.40, pulverizing the previous world record. However, one doctor, while examining his DNA, was finally able to figure out what was wrong, which eventually lead to his demise.”

Arine takes a deep breath. Farea understands that it is a lot of talking for her.

“What was wrong?” Farea asks.

“There are different muscle fibers in the body⁸⁵. Some of them contract faster than others. Zetius had a gene that made him produce more muscle fibers that contracted faster, which made him run faster.”

“But... He could have been born with it, right? I mean, is it cheating if you have it by birth?”

Arine takes another sip from the bottle.

⁸⁵ (Wilson, et al. 2011)

“Not cheating if you have it at birth,” she replies. “The International Community accepts this fact. However, it is cheating if aren’t born with it. By crossing this new sample of DNA with an old one, the doctor found out that he had injected the gene.”

“Gene doping⁸⁶.”

Arine nods.

“Yup. The doping existed for a long time, but it was always pretty obvious. Steroid production, higher testosterone concentrations. But this was the next level of doping, because it couldn’t be seen in a regular drug test.” She takes a small pause.

“Eventually, he was stripped of his titles. He was never actually convicted, but he lost everything. First his wife, then his children, then his money. He stayed low for a couple of years. Then he returned as Zetius.”

Farea has heard a version of this story before. Her dad was a big admirer of clean sports and told her a very similar tale about a world-renowned athlete who got caught cheating. “Was Arine talking about the same person?” she wonders in her head.

“How do you know he is that athlete?” Farea asks aloud.

“Two things. The first one, he runs really fast, astonishingly fast. I knew just by seeing his technique that he had to be a professional at some point. The other is that Luze told me that Zetius used to carry a small running trophy as a weapon. No one does that with an award, unless they have something against it.”

They both sit in silence. Farea, as her ritual, closes her eyes and digests all the information. Zetius was once a famed person. No wonder he is extremely dark now; being stripped of everything like that would make anyone angry and frustrated. Zetius probably still has rancor for what has happened to him.

“One more thing, Farea,” Arine says suddenly. “I know you like understanding, but don’t use it on Zetius. He is one of a kind, so don’t try to mess with him, alright?”

Farea, although she is eager to have compassion for Zetius, knows deep down that it won’t bring her any good. She closes her eyes and lets her thoughts continue to fill her mind.

. . . .

“Hey, wake up, we are arriving.” Arine shakes Farea until she opens one eye.

The scenery is now a green blur. She gets up and looks around. There is no beach. Instead, the tube runs alongside an abandoned road, and there are several tall buildings in the distance. Everything seems to move out slowly, compared to the beginning of the trip.

“How long have I been sleeping?” Farea asks.

“About thirty minutes. We should be there any moment now.”

Farea glances ahead and sees a small station. They are slowly decelerating, eventually becoming almost stationary.

⁸⁶ (Fantz 2010)

“Ladies and gentlemen,” says the interphone, “welcome to Disney World! Thank you for choosing the land where magic happens!”

From its tone, she knows it is an automated message. She needs to tell Al to disable it next time she sees him.

“The exits are on the left. Don’t forget your belongings! Be careful with your step, and enjoy a wonderful time here at Disney’s Magic Kingdom!”

The capsule comes to a stop and opens. Farea can feel the heat and the humidity of Florida rush inside and wash over her like a wave of warm syrup. The air smells like decaying plants. Making a face, she unbuckles her seatbelt and goes outside.

“Wow... this is really different from anything.”

She leans on the railings, soaking in her view of a plaza. Four patches of brown grass surround a tall pole. Around the plaza, she sees several abandoned shops with broken windows. Dust and bits of vegetation have started engulfing the stores. Farea can still picture a little girl just walking in here when the park was open and beautiful... She would have had a perfect weekend. Beyond the plaza, Farea spots a street that goes all the way to the famous Disney Castle.

Arine leans on the railing next to her.

“Wow,” Arine says. “That is amazing.”

They go down the stairs and start walking towards the Castle.

“Is this your first time here?” Farea asks Arine.

“Yes. But that Castle looks exactly like the one I saw before.

Farea looks at Arine, confused. “Saw before?”

“Yes, I saw it two days ago when I put on the lens. Guess we are meeting there.”

Despite being so close to such an iconic Castle, Farea doesn’t feel the magic. Every store near them is a dilapidated mess of shattered windows and dislocated doors. Some flower pots, broken on the ground, have slipped dirt, giving the road a very eerie look, like a battlefield stained with dried rivers of blood. The park is awfully quiet. Not a single bird can be heard, and the air is too hot and heavy to carry a breeze. While looking around, Farea also sees plastic doll parts scattered around, old food trucks flipped upside down, and a ripped Disney World banner. “Could have been magical... Could have been...”

On the horizon, she sees the Castle. The closer they approach, the more she sees clear details. She counts four towers with pointed blue tips. The keep has a narrow peak that stands taller than the rest. Just next to it, she sees a big blue window, just like in princess fairytales. Just beneath it, in the plaza right across the bridge, she spots a small statue of Mickey Mouse and Walt Disney. Directly under Mickey’s nose, four people are arguing about something.

Once she and Arine cross the bridge, Farea immediately recognizes Luze. His brown skin fits really well with his black shirt. His dark hair is short, making him look very young. In normal times, she would scream and wave at Luze. But because Zetius is there, she does not dare to take the risk. They approach, hearing a heated conversation.

“Luze, you fucking coward,” says one of the other people in the mix.

Farea walks a bit faster and joins the small group. Glancing from one person to another, she immediately recognizes one of them. Fancy looking vest, black spiky hair... Bowen.

“Who the fuck are you?” says another person in an Asian accent, noticing her appear across from him.

Suddenly, Bowen meets her steady gaze, and his face reddens.

“Renace...” Zetius says. He looks up. “And Ulyss. Of course.”

Arine walks slowly towards them.

“You...” Bowen snarls, marching up to Farea. He grabs her by her shirt “You will pay.” He looks much more threatening here than he did at the bar.

Surprised, Farea does not come up with an immediate response. She holds his gaze, refusing to back down, as she remembers how she had defeated him—with his own weapon, no less. Her surprise fades into a sense of smugness, and she smiles.

“So beaten by a little girl makes you strong?” she taunts Bowen.

He looks like a stick of dynamite ready to explode.

Arine steps in between them before he can do anything rash. Farea, without losing sight of Bowen, smooths her shirt. Bowen cleans his vest, adjusts it, and stands straight and tall.

“What’s all this about?” Arine asks in a commanding voice, glancing from Bowen to Farea.

“I want this bitch out of my sight,” he replies, crossing his arms and fuming at Farea.

She smirks back at him. No one moves or speaks for seconds.

“Long time no see, Ulyss,” says the Asian guy, breaking the silence. “Is this your little bitch or something?” He points at Farea.

“Hi Yum. I also like you,” Arine replies.

To Farea, Yum is a very stereotypical Asian. Short black hair, a face shaped like a potato. He is wearing a black shirt that is too big for him. She reads a half-written phrase printed across it: “Why not Zo...” A big patch of glue covers the center, probably residue from a ripped off picture. His jeans, large in width but good in height, make him appear to have very long legs.

“Luze is a fucking coward,” Yum says while glaring at Luze. “Ride with us. Will be fun.”

“Ride what?” Farea asks them.

“None of your business,” Bowen snarls. “Rather, why don’t you hang around here? I have a game in mind—”

“Stop it, Bowen,” Zetius says with his distinguished rogue voice. “This is no time for games.”

Bowen looks at her, and Farea can sense the utter and irrevocable loathing coming out of his eyes. “Fine...” he says, taking a step back. He breaks eye contact with Farea and turns to Yum.

“Our lads want to take a stroll,” Yum replies, as he turns his head towards Farea. “Meeting’s not until another couple of hours.”

“How many people are we talking about?” Arine asks.

“Around forty guys,” Yum says with his index finger up. “And counting.”

Forty people! Farea would have never imagined so many Sembradores going together. It sounds big enough to be an inland pirate crew.

“We’ll pass. Too many boys for two girls,” Arine answers.

Bowen raises an eyebrow at Farea. “Scared?” he jeers. “Like the pitiful woman you are?”

Annoyed, she looks at him with daring eyes. “Says the woman.”

Bowen clenches his fists tight. Farea readies her muscles to react; she can see how desperately he wants to punch her.

“Whatever,” Yum says. “Anyways, Zetius, want to come?”

Zetius stands silent for a bit. “If I come, I am in charge, okay? There might be something we need to do around.”

“Okay, Boss,” Bowen replies. “Can you force them to come?”

Zetius looks at Farea and Arine. He is wearing the same clothes as last time. Dark cloak with a volto mask. For a moment, Farea wonders how he can stand such heat with those clothes. Then she realizes just how small Bowen looks compared to Zetius, and she suppresses a smile.

“TOO BAD, YOU WILL MISS A LOT!” he laughs at them. He walks towards the station, followed by Yum and Bowen. Two strides later, Bowen turns around and glowers at Farea.

“When I return, you and I will play,” he utters, his voice low and menacing. Farea glares back, undaunted, until he turns around and stalks away with the other two.

She narrows her eyes at him, wondering what he might say about her to Zetius. The she shakes her head, grins at Arine, and pulls her further into the park.

[EARTH;; Not Right Turn]

“Ever wonder why we were born to do this?”

Jack’s voice—his fingers unwinding another blood-darkened dressing from her forehead then peeling back a red-soaked strip of gauze, his eyes inspecting all eighteen stitches of her most recent Desperate-inflicted battle wound, his lips pressing together with a sort of concern.

“Do what?”

Her own voice—quiet—almost shy—because his touch is sending tingles of giddiness up her spine, and her heart is fluttering faster than a hummingbird... Nellie wonders whether or not he can hear a difference.

“Fight—to survive.”

His voice again—his fingers dabbing a cleaning solution across her skin, his eyes searching her face for a wince or grimace.

Smallish shrug—more an attempt to shake off a whimper than an effort to answer him.

“Because we know how to win, I guess.”

Silence.

His hands begin to apply a new dressing to her forehead. “Makes no sense to me sometimes...”

“Why?”

Then, all of a sudden, his brilliant emerald eyes are aligned with hers, and she altogether forgets to breathe.

“Because our entire world seems too messed up right now to offer anyone even a semblance of a chance at a better tomorrow. Our lives are pointless—I mean, our evolutionary purpose as surviving members of a species is to reproduce, but I sure as heck don’t ever want to bring another being into this hell hole!”

Nod—slow nod—as she notices a shadow appear across his face.

“And you can’t ever do it because you don’t even have enough body fat to support your own reproductive system...”

Blush—because she has skipped fifteen periods straight, and he cares enough to know it.

“I don’t think I would want a child even if I could bear one.”

Her own voice—hesitant and low—she has almost been with him long enough since their first attempt at a kiss for her to want him to love her like that.

“Exactly my point: There’s not a single reason for us to live, yet for some reason we’re both destined to waste our entire lives fighting to survive—Makes no sense to me!”

Pause... Then her own mumbled response.

“Maybe other people appreciate us a little... Maybe other people need us to stay alive...”

His shoulders relax, and his lips sort of smile, and she feels her insides melt like snow beneath a summer sun.

“Maybe...”

Nellie wakes with a groan.

“Sometimes survival seems just too damned painful to be worthwhile,” she mumbles, forcing her eyelids apart.

“*Sometimes* is a bit of an underestimate.”

Nellie jumps, twisting towards a gruff, muttering voice—“Ow!”

“Careful, dear. Those stitches still need some time to set.”

Nellie whirls towards a second voice and just about screams: Some old woman with frizzled grey braids and sun-withered pink flesh is driving her vehicle—*her vehicle!* And a man with mud-and-blood stained blonde hair, a massive dog with matted white and auburn fur, a younger woman with wild red curls and too many freckles, and a boy about her age with a dark buzz cut and a sleeping face are all seated behind her—*in her vehicle!*

“What the heck!” she explodes, wincing in pain, groping for her firearms—not all accounted for... “Who on Earth are you people?” Her own voice is foreign—almost feeble.

“Allies,” that wrinkle-fleshed antique in her driver seat replies. Her voice is willing, maybe even kind.

Nellie almost wants to believe her.

“While you choose to work with us, that is,” that dirt-darkened blonde adds. His voice is as cold as her vehicle is hot.

Nellie feels her pulse quicken.

“Enemies if not,” that red-head finishes for them. Her voice is soft, similar in some way to that of her elder female accomplice, but also sad—and sort of threatening.

Nellie drops her jaw open.

“But we would much rather be your allies.”

Nellie gapes at the red-head, struggling to remember... Then something—a sort of pain—compels her to slip her hands beneath her blood-stained shirt and prod her chest—“Ow!”

The old woman glares at her, and Nellie looks at her lap, allowing a quiet hum—her hydrogen-powered electric motor—to fill her ears and overpower an otherwise discomfoting silence—Engines!

“Shit!” she exclaims, as memories of a swerve—a crash—a rash decision—a flood of headlights—an agonized scream—access denied—access granted—all flash across her mind faster than strobes. She clenches handfuls of her tangled mess of black bob, pressing her back into her passenger-side door and banging her head against its window in the process. “That was not supposed to end like this!”

“Forget about ‘supposed to’ now, dear,” the old woman utters. “We are where we are, and there is nothing we can do to change it.”

Nellie closes her eyes, struggling to regain some semblance of composure—she knows she has more self-control than this! Then she exhales—long and slow. “Where are we?”

“I-95 north, about fifteen miles south of Cape Canaveral,” the old woman states.

“And where are we headed?”

“Kennedy Space Center.”

Nellie furrows her brow, a learned instinct directing her expression to darken and prompting her insides to writhe with disgust. “Why?”

Both women purse their lips.

“Because,” the younger one offers, “we believe there is something worth finding there... at any rate, there is something worth searching for...”⁸⁷

Nellie scowls at her captors, a broiling mix of shame and rage welling up within her. She hears his voice—his wicked, callous, unforgettable voice—bursting out of her frontal lobe and bashing against the insides of her skull:

Remember that bio book we picked up in Harvard? That section on parasites? Well those goddamned, good-for-nothing, bloodsucking, death-dealers have taken on a human form and moved out to Mars—but the worst of them are still on Earth, stealing our oxygen and our water and our food and everything else we need to survive but can't afford to acquire, boxing it all up, and shipping it off to space... for the good of the few.

The best of those STEM-Heads at First Mars don't even know if their ships will make it through our atmosphere once they leave their launch pads... Even real leeches know better than to risk that much—to them, even a single drop of fresh blood is too precious to waste...

But those STEM-Heads at First Mars have always been worse than parasites—which is why all of them deserve to die.

“Leeches?” she roars. “I sacrificed everything I owned then took three bullets to the chest for a bunch of damned *Leeches*?”

“So we busted into our dwindling stash of medical supplies—even though all of *us* are wounded—just to save a fucking *Ignorant*?” the man retorts, his glowering eyes burning through her own furious gaze.

“William King!” the old woman chides.

Then Nellie recalls their names again—Mollie, Will, Athie, Ben. She grits her teeth and glares at him. “*Ignorant*?” she spits.

“Yeah—*Ignorant*!” Will snarls. “Earthling who thinks she knows everything about everything and acts as though she were somehow better than all those other fucking dumb-ass pea-brains who have managed to survive since the Collapse, but (as is obvious to her more educated superiors) who actually knows nothing about anything because she herself is just another fucking—!”

“THAT IS ENOUGH!” Mollie explodes. “More than enough! I refuse to hear another word from either one of you until we get to the Coordinates! Understood?”

“And, for your information, dear, all manned and unmanned missions beyond this planet since 2032 have been made exclusively and explicitly for the betterment of human life on this planet. Unfortunately, the greater purposes of said missions have been lost behind the dollar signs

⁸⁷ (DNC Parks & Resorts at KSC, Inc. n.d.)

and the resource demands broadcasted to the public, so most Conservationists have developed a grave misconception that all of us have wasted quite a bit more than we have ever given back.

“That being said, we can to prove to you that the efforts of First Mars, SpaceX, Planetary Resources⁸⁸, Deep Space Industries^{89,90}, and all of the others were not, in fact, made in vain once we arrive at KSC. Until then, however, I expect silence!”

Nellie exchanges another glare with Will then obliges herself to shut her mouth.

‘Damned Leech,’ she thinks to herself, refocusing her attention on an ominous expanse of storm-grey clouds and a hideous wall of tangled green foliage flashing past her passenger side window.

Even her motor seems a bit quieter for those remaining eighteen minutes of their drive.

Mollie stops her vehicle before a collapsing cantilever of cross-hatched metal—mangled mess still clinging to a single large, almost illegible green sign with curled-up, rusted edges and a drooping, drone-dented center—Exit 212: 407 and Kennedy Space Center^{91,92}.

Mollie cuts power to her motor and sighs. “Benjamin, how far off are we?”

Nellie glances at that sleeper in her back space, as Will reaches over Athie and flicks a rim of his ear.

Mollie searches for his face in her rearview mirror.

Will flicks his ear again, and Ben snaps upright, shielding his head and cowering away from Will all in one rapid motion. “Awake, Will!” he shrieks, pressing his entire being against her vehicle door. “Awake!”

“Good,” Will grunts, removing his arm from behind Athie and returning it to its former position across his chest.

“How far off are we from KSC?” Mollie repeats.

Ben glances outside her vehicle and narrows his eyes at that dilapidated sign.

‘Guess he stored a few copies of their road maps in his head,’ she thinks, *‘because their paper ones never made it out of Helga.’*

“Fifteen plus three tenths miles,” he mumbles at last. “One hour plus thirty-six minutes at business pace.”

“Fuck!” Will snaps, slumping against his seat, and Nellie furrows her brow.

“Business pace?” she inquires aloud.

Athie rolls her eyes at Will. “Gator, after twenty years of education from legitimate schools, including two so-called ‘prestigious universities,’ is that the only word you know?”

“Hurricane,” Will growls, glaring back at her, “and shut the fuck up, Fireball.”

Mollie clears her throat.

⁸⁸ (Kaufman 2015)

⁸⁹ (Reuters 2013)

⁹⁰ (Deep Space Industries, Inc. 2015)

⁹¹ (Google, Inc. 2016)

⁹² (Zwiefelhofer 2016)

“There it is again,” Athie mutters to herself, a smug grin playing at her lips, and Will clenches his teeth together, more than another onslaught of f-bombs preparing to explode off his tongue.

“Business pace?” Nellie repeats, still crunching the numbers in her head—her brain does not seem to want to work very well right now.

“We’re going to run to KSC,” Athie explains, fumbling with her shoelaces.

“William is going to run to KSC,” Mollie clarifies.

Athie freezes, and Will shakes his head.

“In that case,” he states, “*no one* is going to run to KSC.”

Mollie raises an eyebrow at him.

“I’m not doing it alone!” he continues. “Genius is too fucking scared of strangers to leave the interstate, you’re too old to keep up, she’s too injured to even run at all—”

Nellie traces his gaze towards those three patched-up holes in her collar bone—fair enough.

“And Fireball...”

“Can’t see,” Athie finishes for him. “But I can beat you to KSC with my eyes closed—”

“Unless you trip in a pot hole and break your ankle before you get there,” Will retorts.

Athie scoffs at him.

“You also happen to be concussed, and the last thing I want to deal with out there is your vomit all over my last good pair of distance shoes.”

Athie is silent for a moment.

All of a sudden, an earth-shivering rumble resounds about the desolate wetlands, and a brilliant flash of light streaks across the distant cumulonimbus clouds at the base of the grim sky. That giant dog in her back space howls like an air-raid siren, launching herself off Will’s and Athie’s laps and into the back of her passenger seat, as Nellie jumps, gaping out her windshield. Then a warm blanket of rain plummets from the indifferent and uncaring heavens, soaking the already-sopping earth in a matter of seconds.

“Fuck,” Will breathes, his entire being drooping behind his hands, as that dog whines and thrashes around him.

With a half-defeated nod at that relentless pounding of rain on roof and those loudening cracks of thunder, Athie heaves a disheartened sigh. “Sometimes that stupid little word says it all.”

Nellie shifts her gaze away from those storm clouds and glances from Mollie to Athie to Will to Ben. Then she gets a crazy idea. “Can we just walk?”

Ben grimaces, shaking his head with apprehension and disgust. “Three hours plus fifty minutes... in each direction...”

Nellie checks her timepiece, which, much to her delight, is still hanging from her rearview mirror, swaying back and forth above her dashboard holo-projector. “Gets us there by noon and back here before sunset, and gives us time to poke around. Whoever stays behind will just have to drive to Savannah or Miami or somewhere—keep my vehicle moving so no one bothers it—and then turn around and pick us all up before dark.”

“Zero communications...” Ben continues.

Nellie shrugs. “So we take a few extra precautions.”

Mollie bites her lip, a reluctant sort of acceptance flashing across her anxious expression.

Will lifts his face an inch away from his hands and narrows his eyes at Nellie. “Why the fuck are *you* using ‘we’ and ‘us’?”

“Because Mollie seems to believe that you Leeches have something to prove to me, and your space center seems an ideal place for an ‘Ignorant’ to be enlightened—and, if I were you, then I would be sure to not leave a stranger behind in her own vehicle with her own weapons at her disposal, because she might just decide to reclaim her belongings, accept yours with an ungracious thanks, and drive off into this monsoon... so long, farewell, no-strings-attached goodbye.”

Athie sort of smirks towards Will. “She’s coming with us.” Then she removes her feet from beneath that shaking dog and nudges Will towards the door. “Lead us out, Gator!”

“Hurricane!” Will snarls, shoving her back passenger-side door open. He steps out into the storm and raises his middle finger above his head—not that Athie can see it.

Nellie shakes her head at them and rolls her eyes—adorable. Then she turns to Mollie. “Only reasons for you to stop driving are, one, a dire need to urinate or defecate or both, and, two, a damn good chance to gather supplies. Otherwise, stay on the interstate, and never, ever make yourself known—and, for the love of Earth, never, ever do anything that might damage my vehicle.”

Mollie nods. “Okie.”

“Ten hours,” Nellie continues. “We rendezvous here in ten hours. We show up on time. If either one of us is running more than twenty minutes late, or if either one of us fails to show up at all, then we check back here in another twenty-four hours. If either one of us fails to show up again, then we move on with our lives, and we stay as far away from here as possible for as long as possible.”

Mollie nods again—slower—more reluctant to let them go. “Okie...”

Nellie stares at her for a moment more. “Okay,” she breathes, preparing herself to part with her vehicle.

“Wait!” Mollie gasps. “Take a filled canteen and three food rations with you.”

Nellie glances over at her back space—packed with too much haste and too many things—and searches for some sign of her reservoir and her food spitter. But, before she spots one, Ben holds out their own versions of those items, and she forces herself to accept them.

Then she steps outside and strides north, chasing Athie and Will towards the ruins of the exit ramp. “No wonder their ‘business pace’ is a six-fifteen mile,” she mutters under her breath. “There they are, walking—arm in arm because she’s blinder than a bat with its eyes closed—no more than a two-second head start on me—and here I am, almost sprinting to catch up with them!”

Nellie catches a final glimpse of her vehicle, as it sloshes past the exit for 407 and Kennedy Space Center, and she sort of whimpers to herself.

“This is going to be a long fifteen miles...”

407 is a mess of rain-ravaged rubble lined with gnarled, wind-whipped trees that wilt—brown-leafed and zombie-like—over flooded patches of dead grass and dying weeds. The caving-in and altogether collapsed remains of real-people houses are almost discernable between gaps in the west-side foliage. Nellie spots a shriveled up shadow of a corpse there, too, surrounded by a small flock of hideous, pink-headed, black-feathered vultures, all pecking at its parched flesh through blood-stained slits in its ragged attire. She grimaces and begins to wonder how many of those houses still serve as homes...

“Why is there a wall?”

Her own voice, but seven years younger.

“It keeps the Desperates out.”

Her voice—kind, patient, matter-of-fact—a sound anyone in her right mind could trust.

Then a jolt of alarm.

“Auntie Gene, am I a Desperate?”

“No, Nellie, not at all.”

Her smile—enough warmth to melt any amount of worry away.

“Then who is?”

A thoughtful pause.

“One of those nomadic vagabonds—too smart and too selfish to be a Valiant, and too fearless to be a Cowerer, but too ruthless and rash to be tolerated by people like us. They’re dangerous because they’re desperate; they’ll do anything to survive another day, and now they’re organized enough to be deadly. Around here, we can still afford to keep them out, so we do.”

An unconvinced nod.

“Auntie Gene, everyone who lives that close to Death will do anything to survive another day—even people like you and me.”

Her smile fades away.

“Then let’s hope we never have to live there.”

A gradual deceleration—and then her vehicle altogether stops before a gun-guarded gate. Auntie Gene opens her window, presses her palm against a scanning screen, and glances into a high-resolution camera lens⁹³.

“Morning, Patrick.”

A nod from a SWAT-masked gunman in a black graphene⁹⁴ suit.

“My niece is in the back—I have her I3D.”

Auntie Gene holds an identification data disk out her window, and Patrick accepts it.

A hushed whir from a q-unit, some tapping on a screen. Then Patrick returns the disk, and that gate zips apart, unveiling a sprawl of smooth black road, trimmed but browning grass,

⁹³ (Das and ENGnetBASE 2014)

⁹⁴ (Shang and Wang 2012)

*overgrown and wilting gardens, and once-magnificent though almost-identical mansion-sized houses*⁹⁵.

“Welcome home, Nellie.”

“You planning to come back any time soon?”

Nellie blinks, turning towards Will.

He raises his eyebrows at her, and she replies with a swift nod.

“What—?” Athie starts.

“Houses,” Will says.

Athie nods, a sort of sadness beginning to haunt her expression. “Did you ever live in one?”

Nellie questions whether or not she should respond.

“I’m guessing you did at some point,” Will utters, “but you wish you didn’t.”

Nellie stares at him for a moment.

“Am I right, or am I right?” He holds her gaze, flourishing his question with a haughty grin. Then he furrows his brows. “Are your eyes... purple?”

Nellie looks away...

“Ken!”

Her voice.

Then an echo about a high-ceilinged foyer.

“Ken, she’s here! Come down and say hello!”

A violent thudding on hardwood stairs.

Then a pause, a mutual once-over, and his glare aligns with her own doe-eyed gaze.

“Pleasure to meet you... Nellie.”

His voice—he does not sound pleased at all.

“I am so right,” Will concludes, as Nellie represses a nightmarish montage of her uncle on another drunken rampage.

“Purple?” Athie repeats. “Like indigo? Or like violet? Or—?”

“What kind of people owned the place?” Will prods, ignoring Athie.

“Relations,” Nellie replies after a beat of indecisive silence.

“But not your parents,” Will presses.

Nellie shakes her head, and Will nods to himself, a half-satisfied smile spreading across his lips.

“So which one of them went and fucked up your legs?”

Nellie grits her teeth, fighting every flicker of emotion within her as far away from her face as possible. *‘Last thing I want to do right now is egg him on.’*

“What’s wrong with her legs?” Athie asks.

Nellie stares at the horizon.

⁹⁵ (Obeng-Odoom, Eltayeb ElHadary and Jang 2014)

“Listen to her footsteps for a second, Fireball,” Will replies. “She walks with a bit of a limp, so things sound a little... *off*... almost... mechanical...?”

Nellie suppresses an urge to punch him.

“Care to tell us what happened?” Will inquires.

“No,” Nellie states, avoiding his smirking blue eyes.

Will nods again. “Then I guess I’ll just have to keep guessing...”

“Please don’t,” Athie snaps, half-digging her fingernails into his arm. “Start over.” She attempts to turn her face towards Nellie. “I’m Athie Jennson, degreeless master of post-apocalyptic survival and doctor of philosophy in electrical and computer engineering, trained in the drowned dead Helga Institute of Technology by actual-doctorate Doctor Mollie O’Briden, wife of Trey Jennson (greatest martyr of First Mars) and who is best known to me as Mom.”

Nellie almost grins at the title.

“Call me Athie.”

Will rolls his eyes. “William King, University of Miami Class of 2038 Bachelor of Science in Mechanical and Aerospace Engineering and four-time NCAA Division I All-American, California Institute of Technology Class of 2039 Master of Science in Space Engineering, overworked and underpaid research engineer at Lockheed Martin, and wanted-fucking-dead space enthusiast who would prefer not to fucking die before I say I want to fucking die.”

“Just call him Will,” Athie adds.

Nellie raises an eyebrow at her. “Something wrong with ‘Gator’?”

Athie attempts to smother a raucous snicker, as Will clenches his fists and begins to roll an assortment of profane comebacks around in his mouth.

“Just that he used to play ‘against’ Florida during the College World Series⁹⁶,” Athie explains, “and, even though both universities are long gone and never to exist ever again, he just downright refuses to associate himself with a former ‘rival’.”

Nellie laughs.

Will just glowers at them. “I take pride in the fact that I have an alma mater to be proud of, unlike both of you undereducated, self-taught—”

“Says the overeducated self-proclaimed-know-it-all who seems to know nothing of importance!” Athie retorts.

Will opens his mouth, as Nellie senses a shiver in the west-side trees.

“Shush!” she hisses, gesturing through rain and thunderous gloom towards a shadow ahead. Her hands dart down to her thighs—four of her six holsters are still empty. “Shit,” she mutters, as she settles for a less-than-suitable .40 police-force-of-the-past-grade handgun. Then she leads Will and Athie on in silence.

“Might have just been the wind,” Athie murmurs after few hundred uneventful strides.

“Maybe...” Nellie replies, still peering through all of those trees on either side of the road, like a hawk hunting for white mice in a blizzard.

⁹⁶ (NCAA 2015)

“Mind telling us your name?” Athie asks, her voice almost too gentle to be heard above the pounding rain and booming sky.

“Something wrong with ‘Stranger’?” Nellie replies.

Athie seems taken aback. “Um...”

“Just that it’s stranger than ‘Athie’,” Will mutters.

Nellie almost smiles.

.

407 meets an end at 405, and 405 meets an end in a pool of seawater⁹⁷ and bomb-blown bridge rubble on top of what used to be Route 1. *‘So this is what became of NASA Causeway...’* Nellie muses.

Will gapes at it, blinking rain out of his eyes with an appalled sort of shocked disbelief.

“Why did we stop?” Athie asks—more a croak than a question—as she attempts to lift her greenish face away from Will’s puke-smearred shoulder.

Nellie whimpers to herself. “Almost half of her meal ration and more than a third of our water already gone to waste,” she grumbles under her breath, “as if this damned trek out to Leechland, USA, needed to be that much longer!”

Will just goes on gaping, as Nellie sighs and begins to search the pools of brackish sludge below for some way forward.

“Because the road sort of stopped,” she answers Athie, inching towards a precipice. “But the storm sort of stopped, too, so at least we have something going for us.” She half-attempts to grin up at that great expanse of grim and drizzly but quiet grey clouds.

“Where the fuck do we go from here?” Will whines, once again able to convert his disappointing lack of intelligent thoughts into actual words.

Nellie furrows her brow. “Rest of NASA Causeway is probably on the bottom of Indian River now, but, if I remember those maps correctly... then... Down and up and over to those museums on the other side.”

“Museums?” Will scoffs.

Nellie nods. “American Police Hall of Fame⁹⁸ and US Astronaut Hall of Fame—across the bridge and on the right—should be enough stuff left inside them for us to put together a decent raft...”

Will glares at her until his eyes dry up, and he is compelled to blink. Then he tightens his grip on Athie and pouts at the precipice. “Fuck this shit!”

Nellie rolls her eyes and charges onward. “Two real degrees, and his use of language is limited to a few foul four-letter words,” she mutters. “Even certain technical acronyms are longer than four-letters!”

⁹⁷ (Parkinson and McCue 2011)

⁹⁸ (American Police Hall of Fame and Museum 2010)

She swings her bionic legs over gnarled, rust-red remains of a guardrail on her right and marches through roadside mud and organic debris and into a cluster of trees. She picks her way along a nasty slope—steep—slick—sharp with rubble and broken sticks and half-smothered by fallen limbs and trunks. Then she hears Athie keel over and retch again, and she pauses to glance behind her.

Will is just standing there, staring up at dripping brown leaves and swaying branches, waiting for Athie to stop. He stands there like that for a long time. Then he hoists Athie up on to his back and trudges after Nellie, moving with as much care and caution as a first-time father with his newborn child.

Nellie raises an eyebrow at him. “So he does have half a heart,” she thinks. Then she shrugs and charges on, forging a safe path down for him to follow.

Soon that turbid water at the foot of the slope is licking at her mechanical knees—she tucks her second firearm inside of her skin-tight neoprene leggings, just above her butt, and hopes as hard as she can that their waterproofness holds out.

“You two okay?” she asks, glancing behind her, as that putrid brown water begins to clamber up her thighs.

“No,” Will grunts, as Athie mumbles, “Yes.”

Nellie stares at them for a moment and rolls her eyes. “Okay...”

That water never reaches her waist. It hangs out between her prosthetic sockets and her hip holsters for about ten strides. Then it begins to recede. Another ten strides, and it altogether ends where the uphill climb begins. To her, this part is almost—almost—easier than the downhill trek. To Will, this part must be more than a hundred times harder, because he seems to over exaggerate just about everything like that.

The rain slows to a stinging drizzle and stops before they have cleared the worst of the sludge, so, when they emerge from another cluster of trees on the other side, they are soaked and filthy and reeking like refuse from a wastewater treatment plant.

“Maybe no one will want to bother us today,” Nellie mumbles. “Be nice if we were just left alone until we finished this whole grandiose escapade out to Leechland, USA.

She tightens her grip on her handgun—just in case.

“There better be something left in these halls of fame,” Will mutters, returning Athie’s feet to solid ground.

Nellie feels her pulse quicken and her cheeks flush red as an open wound—she has no other plan, so this one has to work—otherwise Will is going to want to wring her neck, or worse.

They continue trudging through sopping earth alongside obliterated highway—nothing left for them to call 405 now—all of them too weary and miserable to think of anything worth articulating, until, all of a sudden, they reach a gated intersection.

Something about those walls compels Nellie to freeze. “Um... Will,” she utters, and he pauses mid-stride.

“What?” he snaps, whipping around to face her.

Nellie glances at those gates. “Some of those laser transceiver pairs⁹⁹ almost seem... maintained... as in well maintained...”

“Is there some sort of perimeter security system ahead of us?” Athie croaks, clinging even tighter to Will.

Will half-acknowledges those dilapidated structures looming up behind him. “So?”

“So a Brain is hiding back there,” Nellie shoots back, narrowing her eyes at him, “which means someone beyond those gates already knows that all three of us are standing here.”

Will replies with an unconvinced blink, and Nellie huffs.

“STEM-Heads who don’t have access to a vehicle tend to hole themselves up like this—gates themselves are just a scare-tactic—cameras and autonomous hounds¹⁰⁰ are more of a threat, and whatever weapons and booby-traps lie within are sure to be lethal.”

Will stares at her for a moment more. Then he takes a closer look at those walls. “Fuck.”

‘In better words, he gets it,’ Nellie thinks, tightening her grip on her handgun—a hopeless action—entirely futile, yet somehow comforting. She inches closer to those walls, making eye-contact with as many camera lenses as she can manage to find until intuition begs her not to go on. Then she halts, flashes her handgun—her only unconcealed firearm—to each lens in turn, and abandons it at her feet.

Then she waits for an acknowledgement.

“Chief don’t like to be deceived, miss.”

Soft voice—close—too close for comfort—and approaching her from behind.

Nellie continues to stare straight ahead, as Will and Athie search a rain-soaked midday gloom in vain for some sign of the speaker.

“Chief knows you got another one on you.”

Nellie remains stolid. Will attempts to mimic her stillness, but he seems too panicked to be petrified. Athie just stands there—helpless—no eyes and all ears.

“Chief wants to see that one, too.”

Hot breath hits the nape of her neck, and Nellie stiffens. *‘At least he almost smells clean,’* she thinks, wrinkling her nose at her own repugnant odor.

“Chief don’t like to be refused, either.”

Different voice.

“Chief knows what you nomad-scum want from us,” the second voice spits, deeper and more menacing than the first, “and he might just agree to provide... long as you agree to return the favor.”

Nellie turns to meet their stern gazes—weather-worn scowls behind the barrels of two identical Beretta pistols¹⁰¹ aimed right between her unblinking eyes. “What kind of favor does Chief have in mind?”

⁹⁹ (Chunjuan, et al. 2010)

¹⁰⁰ (Bowen, Cinar and Sahin 2009)

¹⁰¹ (Fabbrica d’Armi Pietro Beretta n.d.)

The broader man smiles—clean white teeth and healthy pink gums. “First surrender the gun.”

Second voice—harsher voice.

‘At least the other one seems to be in charge,’ Nellie thinks, narrowing her eyes at him.

She contemplates their proposition for a very long moment, glaring down the barrels of their Berettas all the while. Then she purses her lips. “First lower your own weapons and click on their safeties. You keep them down, you get my gun.”

“You ain’t in no position to be demanding shit like that from us right now,” the broader man snarls.

Nellie raises an eyebrow. “I figured Brains like you would know better than to underestimate the capabilities of a stranger’s firearms. Mine just might have been made... *smarter...* than yours.”

The scrawnier man fidgets in place, sneaking a swift glance at her first firearm.

“*Smarter?*” the broader man scoffs.

Nellie notices a flicker of fear flash across his glowering eyes.

“As in automatic aim-and-fire¹⁰²?” Athie whispers, as Will pokes his head out from behind her shoulders.

Nellie nods, picturing several firearms buried somewhere in her backspace, unloaded and idle and miles upon miles out of reach right now. “Voice activated...” she answers, assuming a smug yet unreadable poker-face; she hopes nither of these Brains are smart enough to call her bluff.

The men exchange a somewhat hesitant glance. Then their gun-hands sink to their sides.

Click and click.

“Okay,” Nellie states, gritting her teeth and removing her last mechanism of self-defense—*her last mechanism of self-defense*—from its hiding spot above her butt. Hoping for the very best of the best, but already expecting the worst, she shoves it towards them, grip-end first. “Now lead us in.”

The broader man accepts her second firearm and passes it off to his superior, never once allowing his eyes to stray from hers. Then he lowers his gaze and snatches up her first firearm up off the ground. The men exchange an expressionless nod, and all of a sudden—*click, click, click, click*—every weapon at their disposal is trained on a target—firearm in each of their hands—one for Will, one for Athie, and two—*two*—for Nellie.

“Shit,” she mouths.

The scrawnier man gestures towards those walls with little more than his nose and his unblinking eyes.

“Move,” the broader man barks.

And they do.

They turn their backs to all four of those firearms and—

Nellie remembers nothing more.

¹⁰² (Beard 2014)

[EARTH;; Odds and Ends]

Ben pokes his head over a pile of... stuff... in the back of the Stranger-Car—military joint light tactical vehicle (JLTV) manufactured by Oshkosh^{103,104} sometime after 2015 and retired sometime before 2035—intended to carry 4 passengers on some kind of special operations mission and protect them from harm. The stranger seems to have renovated the interior to accommodate 1 round-the-clock resident for a short yet indefinite period of time—supposed to be autonomous, but she has obviously reprogrammed its systems to enable manual control—also supposed to be equipped with weapons systems and communications equipment, but she seems to have removed all of those things and replaced them with something... else...

Ben stares at another type of gun—light enough for him to hold in one hand and small enough to be concealed while carried. He glances at Mollie in the driver seat and raises the gun up for her to see in the rearview mirror. “This one has all types of sensors and microprocessors embedded in it,” he explains.

Mollie raises an eyebrow. “For what?”

Ben searches for an on switch or a button but finds nothing, so he assumes the gun must be powered up, but none of its electronics seem to have power. “Not charged.” He unclips the magazine and peeks inside. “Not loaded either.”

“She must not like it very much,” Mollie replies.

Ben furrows his brow at 2 other handguns in a spitter-generated plastic box at his feet—identical in design but different in caliber. *‘Makes no sense for someone to make something this complicated then not use it...’*

He shakes his head—not his problem to solve.

“2 more back here, Mollie,” Ben points out, inspecting the gun in his hands again. Then he shoos Bess out of his way and climbs back over to Casper to query all 4 data disks of CAD files that he and Mollie have pulled out of the dashboard q-unit for a particular term... “Autonomous.”

Mollie nods. “Okie... Good thing none of them are powered on and loaded.”

Ben agrees. “No other types of guns back here.”

“List off the totals again.”

Ben glances at the armory surrounding him and shudders. “10 handguns, 6 different calibers, including 2 that launch miniature grenades, 2 that fire taser bullets, plus 3 that have autonomous capabilities... 6 semi-automatic rifles, 4 different calibers, including 2 with enough muzzle energy to shoot something more than a mile and a half away—2 shot guns—plus enough ammunition for all 18 of them.”

Mollie exhales—short and shocked—because 18 guns are a lot for one girl. “What else does she have back there?”

Ben takes another look around. “Spitters.”

“How many?”

¹⁰³ (Moberg 2015)

¹⁰⁴ (Oshkosh Defense, LLC 2016)

“5,” Ben begins, studying each of their extruders and taking note of other components, like lasers and welding guns, to figure out what types of materials the girl uses for spit. “2 for metals, 1 for plastics, 1 for composites, and 1 for... food.”

Mollie blinks. “She uses additive manufacturing to make her food?”

Ben grimaces at the contraption.

“What else?”

Ben continues to organize the haphazard piles—mountains—of things, all threatening to swallow him and Bess and burst through the aluminum-armored walls of the Stranger-Car. He makes a very conscious effort to separate their own belongings from those that belong to the girl—because he wants her to be able to see that none of her stuff is missing or damaged or taken apart. Then he answers Mollie with a tired shrug. “Just a tank for water and some other odds and ends.”

[earth;; More than a Card Game]

Silence reigns the sunlit footpaths.

For the first time in a long time, Farea strolls along on her own without fear. She looks around at the abandoned stores and attractions of Disney World, and, though all of them are dirty and dilapidated, she finds in them a sense of harmony. No longer does she walk on the violent streets; no longer does she walk into the darkness. She remembers when her parents would try to take her on a hike. She would refuse them, saying that the silence bored her. Now, she wants to take back those words.

“Hey Farea, wait up!” Luze says behind her.

She looks back and sees both Luze and Arine a couple hundred feet away. Behind them, the Castle irradiates its colors. The brown-skinned man does not stand tall like Zetius next to Arine. He is just a couple of inches higher. Walking slowly, they seem to be talking about something—probably something important—but Farea is not interested.

“You guys are so slow...”

“Well... our stop is here.” Luze stops in front of a rundown shop on the corner of another street.

Rolling her eyes, Farea turns around and joins them. She gapes at the street. Vines spill out of multiple buildings. Tree roots have smashed several windows and now curve into the ground. Some tables and chairs are strewn across the footpath in chaotic patterns, and most look destroyed.

“This is our stop?” she says in disgust. The shops ahead of them almost seem worse off than most in the park.

“Yeah, good isn’t it?” Luze replies.

She turns her head in a state of confusion.

“What’s good about this place?” she says while turning towards the street again. “Looks pretty bad to me.”

“You should have come here a couple of weeks ago,” Luze says. “There were snakes all over the place. Jeff was furious, but he made a nice soup out of them.”

They start walking along the footpath. Farea notices moss growing around the base of the shop closest to them. A couple of inches from the ground, its walls are stained green with chlorophyll.

“Swamp?” Farea says, pointing at the shop.

“Hurricane¹⁰⁵. Last of the year... hopefully. Ever since... ummm... cambio climático... what do you call it?”

Farea looks at him, puzzled. *‘How does he not know this?’*

“Climate change?” she offers.

“Yeah... Climate change... That’s it. Anyways, ever since climate change, hurricanes have been more frequent.¹⁰⁶ Swamps have become bigger; they even swallowed Epcot!”

¹⁰⁵ (Erdman 2015)

¹⁰⁶ (GFDL 30)

“Epcot?” Arine asks.

“Oh... The other part of the park.”

They continue to walk along the street. Farea can feel her feet becoming heavy. She does not know whether it is from her sweat or from the dampness of the ground. Small puddles left by the hurricane still speckle the footpath like a fungal disease.

“I’m surprised that all the water drained so quickly,” Arine says.

“Luckily, when they made the park, they included a sewer system,” Luze replies, pointing at a small grate. “Just drill a hole in the ground, and everything is set!”

Farea looks at the grate more closely. The hole, perfectly circle and partly clogged with debris, is several inches in diameter, wide enough to fit a bottle-size cylinder.

“How was that drilled?” Farea asks, pointing at the perfectly shaped circle.

“From what Jeff told me, plasma drilling machine¹⁰⁷. Don’t ask me how it works. My brain didn’t comprehend his description when I asked him to explain it.”

Farea widens her eyes at the grate. Technology just amazes her every time.

After several minutes of walking down the street in silence, they begin to hear noises coming out of a shop. Luze comes to a halt, and Farea notices a facade beside him that has not been ravaged by Nature. Its door is screwed to its hinges, and its windows are clean. Plus, the place looks busy inside. A small sign hangs above its entrance. The characters written across it are too tiny for Farea to read at this distance.

“Don’t fucking lie to me, Terris!” yells a furious deep-pitched voice from the inside. “I know you’ve been cheating!”

“You whiny insolent pest,” replies a female voice. Farea cannot recognize her accent. “Learn to lose, you jerk!”

Suddenly, the door slams open, revealing two people standing face to face. Their hands are clenched around each other’s shirts, and they are glaring at each other. Both of them are wearing black clothes and hats. Farea cannot really distinguish them.

Suddenly, both of them let go.

“Piss off!” says the man. “Hopefully you come apologizing at the meeting!”

“As they say in my country, your mom!” the woman says.

Both of them stalk off in different directions, heads down. The woman is stomping right towards them, tugging at the newsboy on her head. Farea hears her muttering to herself in a foreign language, and the intonation of her voice makes Farea a little bit scared.

Then the woman looks up, straight at them. With red curly hair flowing down her neck like a waterfall, there is a European aspect about her. Back straight and tall, broad shoulders, she makes Farea feel extremely impotent.

“What are you guys looking at?” she asks. Her voice does not evidence any kind of fury, despite the earlier yelling.

“Nothing, Terris,” Luze says to her. “Just wanna go to Jeff’s.”

¹⁰⁷ (Scott John MacGregor 2007)

“Well, if that asshole comes back,” she points over her shoulder with her thumb, “make sure he knows he’s a hectic reborn-retard!” She walks quickly, stepping right in between them, hitting her shoulders in the process. Farea and Arine look at each other, unsure of what they have just witnessed.

“Beat him at his own game!” she gloats, raising a small pouch from her pocket before disappearing in an abandoned shop on the far right.

“That’s an insult I’ve never heard of,” Farea states once Terris is far enough to be out of earshot. “Hectic reborn-retard.”

“Has to be the French girl...” Luze sighs. “Come on, let’s go in.”

The place is very small. The sign welcoming them on the other side of the door clearly says “Jeff’s Home Restaurant”, but, to Farea, this is just a cramped bar. In addition to the counter and a few stools, she counts three tables and six chairs. Playing cards are scattered across one of the tables, and two of the seats on either side of it are misaligned, as if people have left in a hurry. An old man sits there still. White hair, deep wrinkles on his cheeks and forehead, a pale grey goatee scruffing his chin. A cane with a handle shaped like a raven about to take flight rests next to him. He closes his gnarled fingers around a short glass filled with brown liquor and brings it to his lips. His eyes, shielded behind small round glasses, remain focused on the bound-paper book in his right hand, unaware of the new visitors. Farea squints to see the title on the hardcover: *The Art of War*.

“Some books will never get old, will they?” she says to Arine.

Arine looks over her shoulder.

“Those are unique books. I should have read some of them when I had the chance.”

Both of them turn around, facing a buff man. Naked torso, bald head with a serious hard face, no more than five-foot-eight in height, Farea might describe him as a weight-lifter. He is not the type of bartender she is expecting.

“Long time no see, Luze,” he says, as if Luze were a regular. “Coming for a last toast?” His accent is not perfectly American.

“Mi amigo!” Luze says with a heavy Spanish accent. “Of course not. Coming for one of many!”

The bartender takes out two shot glasses, picks up a bottle behind the counter, and pours a transparent liquid into both of them. Then the two men toast before gulping the liquid down and slamming their glasses on the counter. Luze looks at the bartender seriously. His lips are pressed together, as if he were trying not to throw up. Then the bartender breathes out loudly, and Luze smiles.

“Ajá.” He swallows his own saliva. “You lost, Jeff.”

“Next time, lad...” he replies with a determined voice. “Next time...”

Both of them glance back at their empty shot glasses.

“What did you drink?” Farea asks.

“Aguardiente. I got it in one of my trips to the dry lands.” Luze points out a small bottle. No label, dusty, and marked with fingerprints. “That’s the stuff.”

“Wanna try?” Jeff asks while looking at them. Farea shakes her head, and Jeff smiles. “Anything you ladies do want?”

“We are not really familiar with the place...”

“Just get them regulars,” Luze intervenes. “They came from D.C.; long trip.”

Jeff nods. “Green! Two regulars!”

“Got it,” a guy says in the back.

Luze puts his hand in his pocket and withdraws a thin black wallet made out of snake skin. In a time when barter is used because paper currencies no longer exist, Farea wonders what he could have to pay with.

“On the house,” Jeff says with a smile.

Luze smiles back and puts his wallet away. Then he arches his fingers and starts tapping them one at a time on the counter, fast, like the hooves of a galloping horse, as the bartender pulls out two new glasses. Farea watches the man pour another transparent liquid, this time from an orange bottle, into both of them. Then he serves the two glasses, and Arine drinks. She tells Farea to drink, too.

Reluctantly, she tastes it... Water.

“All the way from D.C., huh?” Jeff says, looking at Arine. “North Sembradores?”

Arine stares into her glass of water. “Yes. First time you’ve seen people from the North?”

He picks up a dirty cup and starts rubbing it with a greying white towel.

“Zet’ comes down here now and then. Who are you girls, by the way?”

“I’m Ulyss; she’s Renace.”

“Nice to meet you both. I’m Jako, the bartender. But call me Jeff.”

Farea looks at him. “Are you a Sembrador?”

“Nah. Just a bartender. Business runs thanks to you guys, though.”

Farea takes a small sip of her water.

“You girls excited for the meeting?” Jeff asks them.

Both of them shake their heads with a blank stare. Farea does not look very optimistic.

“Hehe, kinda scary,” Jeff says, empathizing with them. “Must admit, at first, I was scared to serve you fellows. Now, I’m just used to it.” He points to the white-haired man at the table behind them. “You should have seen Terris and Eran! They got into a serious brawl just because Eran lost one game of Texas Hold’em.”

Farea looks at the table. Besides the cards, there are old beer bottle tops and other makeshift betting chips scattered all over it. Some are strewn across the floor, too.

“Nothing at stake?” Farea asks.

Jeff shakes his head. Then he opens his mouth.

“Pride...” the man at the table answers. “Reputations... Respect... You name it.” His voice, well-paced and firm, makes him sound wise.

Farea looks at the man. A clean white V-neck dips down to his sternum, revealing two protruding clavicles and several scars on his chest. She can tell that most of his wounds must have been from edge weapons. A brown coat is draped over his shoulders, but he does not seem to mind

the Florida heat. He begins to stroke his goatee, still focused on the book. He flips a page and takes a small sip of his drink.

“Not only that,” the bartender adds. “Eran bet a gold pouch. Where he got it? I don’t know. But it sure looked shiny enough to steer a woman’s eyes.”

Still focusing on the man sitting at the table, Farea begins to wonder at how calm he is.

“So he lost a round of cards and got upset?” Arine asks Jeff.

“The last,” Jeff emphasizes. “He had a pair in his hand, but Terris had a full house.”

“Isn’t it just luck?”

“Nay,” the man says, still reading. “Luck is for those who don’t understand.”

Farea tilts her head a little bit, asking herself, *‘What does he mean?’*

“Here, Jeff, two regulars” says the guy in the back.

“Thanks, Martin,” Jeff says while serving them to the ladies.

Farea turns around and faces the counter again. In front of her is a plate with two big sticks of meat next to shreds of lettuce. She can smell the juice and feel the heat coming out of it.

“Sheep?” Farea asks candidly.

Jeff laughs. “Nah. Good old alligator you’ve got there.”

Farea looks at him in disgust. Alligator meat. She has never tried it before. She takes a bite reluctantly, but the taste is exactly like chicken. Suddenly feeling hungry, she eats more.

“Good, isn’t it? Should have been here a couple of weeks back. Snake soup and that make a good combination.”

Completely ignoring his comment, Farea eats the two sticks in less than two minutes. The meat melts in her mouth, and she closes her eyes, devouring her meal like a lion eating a gazelle.

“You gotta slow down next time...” Arine protests. She is slowly eating her own food.

“An empty stomach never helps,” Farea replies.

She takes the stick, now devoid of alligator, and starts to pick at the bits of meat stuck in between her teeth.

“Who’s the old pops?” Farea says while pointing with her thumb over her shoulder.

Jeff looks down, covering his mouth with a fist. She can see he is smiling, almost about to laugh.

“Careful, lady,” the man says. “Use the correct words.”

Farea turns around and crosses her legs. The old man gently turns another page of book. Her rudeness has not seemed to affect him.

“Granpa?” Farea asks him more politely.

“Try again,” he sighs, but she can see a smirk forming on his face.

She takes her time to talk again.

“Old man?”

“Better, but not quite there yet.” He flips another page.

Farea props her elbow on her thigh and rests her head on her palm. Then she gently rubs her eyes with the heel of her hand.

“Man?” she says with a hint of hesitation.

“Better. You can do better.”

She closes her eyes and starts thinking really hard. This time, she does not have a word.

“With all due respect,” says Luze, “I don’t think we know what to say.”

The old man claps the book shut between his palms.

“Correct! Five points for the man!” He looks at the ceiling. “Jeff, give him some of your finest brandy.”

“Um...” Jeff begins with confusion. “There’s no more brandy, since you drank it all last week.”

Tilting his head, the old man seems to be thinking deeply.

“Was it really me?” He puts his hand in between his shirt and his coat and retrieves a small rectangular flask. He hands it to Luze. “Have some; you’ve earned it, lad!”

Farea looks at Luze. Skepticism covers his face, but he reaches out and drinks a sip. He swallows, and suddenly his eyes open up, and his cheeks fill with air. His body starts moving and he tilts his head downwards, like is going to puke. Luze clenches his fists very, very hard. He resists the desire to regurgitate the liquid and stands straight again before handing back the flask. The man reaches out but does not say a word.

“That’s... an interesting drink,” Luze comments.

The old man puts his metallic flask back into his jacket. He opens his book with his right hand and leans on the chair, reading again. “Need a small aguardiente, Jeff.”

“You sure?” Jeff says with uncertainty. “That’s your third already.”

“Need some to fire up some spirit,” the man says with a dry voice.

Jeff serves him the transparent liquid, and he takes the shot. He closes his eyes.

“Ah... nice and refreshing... nice and refreshing,” he says while his mouth tastes the liquor. He continues his reading and, without looking elsewhere, places the empty shot glass next to him.

Farea looks at Arine, who has not been talking a lot, but has been observing. She is frowning, studying him and his surroundings.

“Why the cane?” Arine asks carefully.

“That’s a better question.” He flicks another page. “I’m getting old, you see.”

“No... If you were getting old you wouldn’t be wearing sandals, especially here. Your feet would hurt too much.”

Farea peeks under the table. His legs are hairy, and so are his uncovered toes.

He gently closes his book. “What’s your name, young lady?” He looks deep into Arine’s eyes.

“My name is Ulyss.”

“Ah.” He quickly observes her from head to toe. “I know about you. From the North... Hmm... You remind me of some... Her name was Alba.”

Arine gasps quietly after hearing that name. Farea gapes at him, confused and shocked.

The old man looks back at them. “Do you know her?”

“H...h...” Arine is having a hard time speaking. “How do... do you know that name?” Arine stiffens a little bit. A mix of confusion and sadness glimmers within her eyes.

The man stares at her for a moment before continuing to read.

“Ah... maybe the wrong time to ask that question... Wrong time. Wrong time,” he mumbles, shaking his head.

Farea sees Arine closing a fist and biting her lower lip. Remembering is hard, but Alba was very dear to Arine. She will never forget about her friend, despite the pain memories of the event bring her. As Farea’s mom used to say: “*It is easy to forget, hard to remember.*”

Luze walks next to Farea and leans on the counter.

“Who is Alba?” he whispers.

“I’ll tell you another time,” Farea says before moving towards the table.

She looks at the old man and stops right in front of him. The old man looks at her, slightly raising his eyebrows.

“What can I do for you, my lady?” he asks while resuming his reading.

Not replying to his question, Farea crouches and starts picking up the cards and the chips that have been scattered on the floor. It has been a long time since she last played cards. She looks at their designs more closely, as she collects them, and she notices that most of the cards are stained with dried drops of blood. After picking up as many of them as she can find, she places them in a single stack on the table, alongside two handfuls of chips. Then she counts the cards slowly in her head. Fifty-one.

“Missing a card,” Farea mentions.

The old man nods to her, eyes still glued to the book.

“Is reading the only thing you can do?” Farea asks while counting the chips.

The old man remains silent for several seconds and flips another page.

“Reading is what you think I’m doing. Understanding is what I’m actually doing. Big difference there.”

Every time he starts talking, Farea pictures him sitting on an armchair, rubbing his goatee and pondering philosophy.

“So... Understanding your reading?”

He nods. “If you can’t understand what you are doing, why bother doing it in the first place?”

“So that’s why you are reading a war book?”

The old man smiles.

“What makes you think it is a war book?”

Farea looks at him, confused. The answer is obvious to her. “Because the cover says so?”

He takes a pause of his reading and removes the cover, unveiling a leather-bound black book. *The Little Prince*.

“Hey, I know that book!” Farea says, pointing at the title.

“Everyone should know this book. It’s fantastic!”

Farea looks at Arine and Luze. Both of them shake their heads, disagreeing with the old man.

“But... Why this book?” she asks, returning her attention to it.

“The book itself seems like it’s for kids,” he turns a page, “but there is a lot that never meets the eye. What’s your favorite part?”

Farea looks down, trying to remember the story. It has been a very long time since she last read it. She only recalls bits and pieces.

“I don’t remember the whole book” she says honestly, “but my favorite part is Lamplighter.”

The man puts the book down and looks at her. His brown eyes stare deep inside hers, as if searching for her soul.

“And why is that your favorite part?” he asks with a soft voice.

“Because... it reminds me of my grandfather. My dad used to tell me that my grandfather worked and worked, order after order, without having a pause in his life. He didn’t have time for anything just because of how overwhelming his work had become.”

The old man puts his elbow on the table and rests his head on his hand. He stares at the window, where the setting sun has started to emit a yellowish-reddish glow. His eyes look outside, as if he is remembering something long forgotten.

After several seconds of silence, the old man looks down at the table. The cards are well piled and the chips are all clustered in one place.

“It’s getting dark. Should be time by now.”

Arine looks at her wristwatch. “There’s still an hour and a half before the meeting.”

The old man takes the pile of cards. After riffle shuffling them, he deals four pairs of cards, one on each side of the table. Carefully, he leaves the deck sitting in the middle of the table. Then he distributes the chips, one at the time. Eventually, he is left with three chips, so one person would have to start in disadvantage. Total count: eleven chips each, ten for the unlucky player.

“Let’s play a game, shall we?” the old man says. He does not look to anyone, but Farea can guess that he is asking her, Arine, and Luze to join.

She looks at them and motions them to come. Reluctantly, both of them leave their stools at the counter and sit at the table. Farea decides to sit where there are fewer chips. Next to her is the old man, and sitting across is Arine.

“Have you guys played Hold’em before?” the old man asks.

Farea is familiar with the game. She has played it in the past, to kill time.

Luze nods, but Arine shakes her head.

“Very well. We are doing a trial run right now,” the old man asserts. “No need to bet, okay?”

All of them nod at the same time.

“You have two cards,” he continues. “Look at them.”

All of them look at their cards. Arine holds hers up high. Immediately, Farea snaps her fingers to catch Arine’s attention.

“Hey, put them low. You just need to look at the tips.”

Embarrassed, Arine flushes a little bit and lowers her cards. Farea looks at her own two cards. Five and ace, both of hearts.

“Could be worse...” Farea says to herself. She follows her comment with a yawn. In poker, luck is one thing, but one also needs to learn to bluff.

“Since we’re not betting anything now, I’m going to reveal the first three cards.” The old man takes the first card, tosses it aside, and places the next one face up. He flips two more cards beside it, completing the flop. Five of clubs, three of spades, and king of spades.

“Wait...” Arine says. “How do we know who wins or not?”

“In poker,” Luze rolls his Rs, “you have royal flush; straight flush... Those are extremely rare, so don’t mind them... Four of a kind; full house, which is three of a kind plus a pair; flush; straight; three of a kind; two pair; pair; and then highest card.”

“What’s a straight and a flush?” Arine asks naively.

“A straight is when you have five consecutive cards,” Luze replies. “They can be from different suits. A flush is when you have five cards of the same suit. They don’t need to be consecutive. So far so good?”

“So four, full, flush, three, straight, two, pair.”

“Straight, three, two, pair. And highest,” Luze corrects Arine.

“And highest...” Arine repeats.

A brief moment of silence follows. The key to poker is for one to be able to read the opponent without them knowing what one has. Any body language, even the slightest breath, can give others a hint. Farea looks at each player for ten seconds. The old man smiles just like he has been all along. Nothing there to see. Arine is also smiling, so she must have a good hand. Luze is playing with a stolid poker face, but his eyes are faintly sad.

“So, usually,” the man says, “you start betting before the flop, depending on your hand. But, remember, everything is a mind game. You can either check—you don’t add any amount on the table—match, raise, or fold. Fold is when you don’t want to bet anymore.”

Arine nods.

“Since I’m the oldest, I will start. Check.”

“Check,” says Arine.

“Fold.” Luze puts his cards face down on the table.

“Check.”

The old man burns a card then flips the turn. Two of diamonds.

“Check.”

“Um...” Arine hovers over towards Luze. “Do you think I have a chance?”

Luze looks at her cards with attention. Frowning, he whispers something in her ear. She nods.

“Check, I guess, since we aren’t playing for anything.”

Farea looks at them. “Check.”

The old man burns another card and flips the river. Six of diamonds.

“Time to show hands,” he states. Then he reveals his cards. Three of hearts and queen of clubs.

“Pair,” the old man points out.

Arine reveals her cards. Six of spades and five of diamonds.

“Double pair,” Arine says, satisfied.

Farea puts her cards down gently, revealing her hand. She does not feel anything. After all, this is just a trial.

“Pair, but doesn’t matter. Arine wins the tutorial run.”

Arine lifts her fists up in the air. Farea does not really understand why she is so excited, especially since it is just a trial.

“Let’s play the real deal. Seems easy!” Arine comments.

“How about a little betting now?” the old man asks.

Arine turns towards him.

“Betting what?” Arine asks with a polite voice.

“Well... Let’s say a small metallic object.” He tosses a vintage handwatch into the center of the table, scattering some beer caps. “For me to play.”

All of them start searching into their pockets. Luze is the first to find something: a needle he happened upon earlier. Arine throws in a fork, while Farea bets her Swiss knife.

“Well...” The old man is slightly shocked. “The stakes just got really high.”

“It’s the only metallic thing I’ve got,” Farea says.

The old man eyes her intensely. Deep down, the Swiss knife means a lot to Farea. It has been there ever since she left home, rescuing her whenever she has gotten into trouble. Farea has no desire to bet it, but, since he asked for something metallic, she cannot refuse. Because she would never bet her necklace. Worst comes to worst, the knife can be replaced.

“Okay!” The old man shuffles again. “Let’s play!”

The distribution is quick this time. Farea looks at her cards. Five of spades and four of hearts. She does not show any emotions, but deep inside she is afraid. She wonders which card is missing from the deck... Hopefully not a five or a spade or a four or a heart. Farea peers around, curious, almost haughty, not even a hint of nervousness in her gaze. Except for Arine, who is looking back and forth between her two cards and Luze, all have a poker face.

“I’ll raise five chips,” the old man begins, tossing them to the center.

Farea has forgotten about the chips. There they are, in front of her, ten chips.

“I also go for five chips.” Arine tosses them to the center.

“It’s called calling, Arine,” Luze reminds her while gathering five chips of his own. “I call.”

And so does Farea.

The old man, deck at hand, burns a cards then draws the flop. Five of diamonds, four of spades, and ace of spades.

‘Nice hand so far,’ Farea thinks. ‘Could be my lucky day.’

The old man takes a while to make his next move. He looks around, observing everyone’s reactions. Farea tries to contain her smile, but her lips form a discreet smirk. Luze, arms crossed, is slouching like an uninterested student, while Arine, leaning forwards, is very concentrated.

“Check,” the old man says at last.

Arine sighs slightly and looks at her cards again. Farea can tell she is unsure of what to do now.

“Let’s see...” She looks back in forth between her cards and the three on the table. “Um... I go for three chips.” She tosses them to the center of the table.

Luze, still lying back, takes his chips and starts counting them slowly.

“One... Two... Three...” He tosses them gently. “And raise... Four... Five!” He is left with one chip. This means that Farea needs to go all in if she wants to win.

“Well... this is inconvenient...” Farea calls Luze’s raise.

Immediately, the old man calls, too.

“Ummm... Uhhh...” Arine holds her hand tight, eyeing everyone. “I guess that’s it for me.” She folds, and, with a gentle flick, she makes her cards fly out from her fingers.

“Since Farea went all in,” the old man grabs his watch and reads the time before putting it back in the center of the table, “and since I don’t have much time, let’s reveal the remaining two cards.”

Burn, draw, burn, and draw. Five of hearts and jack of clubs.

Farea has a full house, which is pretty high.

“Since I’m an ol’ man with lots of patience, I’ll let Mr. Luze here show his cards first.” He motions Luze to reveal his cards.

Gently putting them on the table, Luze unveils a jack of spades and a queen of hearts.

“Pair...” Luze says.

Farea closes her eyes and tilts her head backwards, allowing her smirk to widen a little. She knows she is likely going to win.

She reveals her cards.

“Full house,” she states, sliding the fives and the fours together.

“Wooaaah! Nice hand, Fa... Renace!” Arine says.

The old man stares at his cards. Then he looks at Farea. It is a kind of look Farea never gets from people, and she does not quite know how to handle it. His eyes seem to be gazing straight through hers, reading her mind. She cannot see what he finds there, but deep down she is anxious and scared.

Suddenly, he smiles.

“Well... I guess I lost my handwatch,” he says in disappointment. He keeps his cards face-down on the table, so no one can see them. Farea, relieved, leans back on her chair. Not that it matters now, but the mere thought of actually losing her Swiss knife over a card game makes her feel uncomfortable. What was she thinking when she had made that bet?

“Unfortunately,” the old man says while standing up, “despite me liking your company, I need to retire. I have some preparation to do for the meeting.”

As he stands up, Farea runs her fingers over the face of the handwatch. Round as a full moon, gleaming in the twilight. It hangs from a long metallic chain, displaying twelve roman numerals beneath two pointed hands. Farea looks at it with awe. It is a truly remarkable piece of

engineering—old engineering, from before digital was even a dream. She cradles it in her hand and feels a subtle ticking inside of it. Then she goes to the old man.

“Excuse me, Sir, but you never said your name.”

“My name?” he smiles. “I guess you’ve earned it. Name’s Herm.”

Farea holds her arms out straight and opens her hands.

“Take it back. It’s yours.”

“You won it fair and square.”

“Mr. Herm, I don’t take things from people like that,” she insists.

Herm smiles. This time, it is a rare kind of smile of deep appreciation. But there is also something else in it. Farea cannot point out what exactly.

“Thank you Renace. I’ll see you in an hour.”

Herm pockets his handwatch, takes up his cane, and starts walking. Then he opens the door to Jeff’s. A gentle gust of wind swirls inside, blowing several cards on to the floor. Tumbleweed threatens to bounce through the door, as well, but Herm takes his cane and catches it.

He turns around. “Nice meeting you guys! Jeff, thanks for the shots!” With that, he steps outside and closes the door.

An awkward silence resonates through the bar. Everything seems too still, like the sea before a storm.

“Oh boy!” Jeff says, shattering the quiet. “You guys played well. Anyways, I have some things to tell you guys.” He motions them to come to the bar, near the stools. “It’s rather important for your meeting.”

Luze and Arine start walking towards the bar while Farea goes back to the table. After fixing the mess of cards and bottle caps strewn across it, she takes the needle and the fork and holds them up. “You still want these, guys?”

Neither of them say a word. Farea takes them, even though she does not know what purpose they are going to serve her. Then she slides her Swiss knife back into her right pocket. “Much better there,” she thinks. She finishes cleaning up the chips and starts to pick up the cards. She assumes the deck belongs to Herm.

‘I will need to give it back to him some time,’ she muses, beginning to follow the wind-blown trail of cards around the room.

“You are missing Herm’s two cards,” Arine says, pointing at the far corner of the room. “I saw them fly over there.”

Slowly, Farea turns to go for them. From where she is standing, she can see they are flipped up, open to see. She knows it is rude to see the cards of a player who decides to not show them, but Farea cannot do anything to help it now. She strides across the room, crouches down, and picks up both cards. Something ticks in her mind, as she stares at them and recalls the flop, the turn, and the river... *Five of diamonds, four of spades, ace of spades... Then five of hearts and jack of clubs...* Confused, she remains crouched like that for another moment.

‘Herm is an interesting man... very interesting man.’

Realizing what it all means, she smiles and exhales loudly before getting up. Then she slips his two cards back into the deck.

Four of clubs and four of diamonds... Full house.

. . . .

Soon the sun disappears below the horizon. Just the four of them—Farea, Arine, Luze, and Jeff—still occupy the bar now. Martin Green, the guy who works in the kitchen, has left about thirty minutes ago. Aside from the low murmur of their conversation, the place is silent.

“No way... Karash is dead?” Farea asks, surprised. Her voice seems too loud, too harsh.

“Sadly, yes, my boy Karash is dead...” Jeff sighs softly. His sadness, expressed by his slow and gentle cleaning of cups, resonates inside Farea.

“Do you know how he died?” Arine asks, her voice little more than a whisper.

Jeff sighs again, offering a small nod. “I heard this from Isa. He died because of the flu, nasty little virus. They were in Britain, looking for a guy, when he caught it. She’d brought several past vaccines, so he was inoculated with more than one strain before then, but since the virus mutates every year, none of them worked¹⁰⁸. So he never recovered, and he died in the mountains.”

Farea, despite not liking Karash too much when she first met him, feels sorry for Jeff’s loss.

“That’s horrible...”

“Ye. That’s why I stay south. I am surprised that you people never got it.”

Farea bows her head a little, remembering a man who was sick with something like it and got tossed out in the streets to die. She left him there, feeling helpless. It was her first time seeing a person die.

“How about other people?” Farea asks Jeff.

“Um... You should know. Trance can’t make it because of some black market issues. Other than that, everyone should be there.”

She nods. Nervousness is gnawing at her stomach now.

“Well then, you guys should go,” Jeff says after looking outside. “L doesn’t like when people come late.”

After quickly cleaning up the counter for Jeff, they head towards the Castle. The western horizon is still more greenish-blue than black even though the sun is down, and several street lights of different colors have been lit, giving everything around them a nice magical touch.

“Wow!” Farea says in awe. “Street lights can light up like that?”

“You have never seen a filter before?” Luze asks.

“I mean, only red and green. But there’s purple, orange, pink... even pale yellow!” she says, pointing at one of the lamps.

As they walk through the streets, they notice several of the bulbs flickering. Luze tells her that flicker means those lights need maintenance.

¹⁰⁸ (Center for Disease Control and Prevention 2015)

“It’s been a long time since someone has actually taken care of every single lightbulb,” he adds.

“Then how do they operate?” Arine asks.

“Just plain old rechargeable batteries¹⁰⁹ and solar panels,” Luze tells them.

Crickets and frogs chirp alongside the streets, but no person is to be heard.

“Where is everybody?” Farea wonders aloud. Her voice echoes through the emptiness like a gunshot in a graveyard. She stands still for a second, hoping to see if someone besides Luze and Arine is around. But she does not notice anyone, so she quickly catches up to them.

“Everyone comes five minutes early,” Luze tells her while accelerating the pace. The Castle is right in front of them now.

After two more minutes of speed-walking in silence, they arrive at the entrance.

“No one is here?” Farea inquires.

“The meeting is inside,” Arine says, heading towards one of the towers. At the same time, she opens her bag and takes out the metallic cylinder from the docks. They stop in front of a wooden door with a small opening underneath.

“PASSWORD?” says a voice behind the door. Farea sees a shadow on the other side of the opening.

Arine slides the cylinder through the opening. Immediately, the door begins to open. The rusted hinges cry out like nails on a chalkboard, making Farea cringe. But then a faint pale light escapes from inside, casting a rather mystical glow upon them. Not quite warm and welcoming, but not quite eerie, either.

‘Just like in fairytales,’ Farea thinks to herself.

After another moment, the door is finally open fully, revealing a spiral of stone steps, which seem to follow a simple decorative pattern, very similar to ones in old cathedrals. A cold breeze slides down the staircase, beckoning them onwards like an overanxious ghost. Farea can almost recognize the faint sounds of serious conversations coming from above. However, she hears no echoes of anyone climbing the stairs. Arine takes a few seconds to compose herself a little more. Then she enters the staircase and leads them up to the meeting.

“This place spooks me out,” Farea whispers while climbing the stairs. She notices a series of cathedral-like glasses set into the stone walls around them, each depicting a dust-obscured story scene while attempting to reveal a wonderful view of the lamp-lit surroundings. Several glasses, shattered beyond repair, leak some air inside.

“They kept the design for the children,” Luze says. “The park used to be very famous back in the day.”

“Was this place an attraction?” Farea asks.

“Just a restaurant and some beds.”

They climb for another two minutes before encountering a small arched opening. Farea can hear a sonorous murmur coming from the other side. Voices. Lots of them. Stepping through it, they come to a small desk-like wooden counter with a stained glass on top of it. The counter, used

¹⁰⁹ (Sid Megahed 1994)

in the past to welcome customers, is very dusty and unpolished. A small screen still sits on top, but no one sits behind.

They contour the glass from the left side. Soon Farea sees a big room. The ceiling is well above twenty feet high and speckled with chandeliers, like a star-studded midnight sky. The walls are comprised more of tall color-stained windows than of stone, but Farea can no longer see outside.

The center of a room is occupied by a long table made up of six or seven smaller ones pushed together. About eight seats are filled with people. Farea recognizes Eran, the guy who lost to Terris, in one of them. He is lost in his own mind, mixing the insides of an empty cup with a wooden stirrer. Hun, a serious Asian with a beard, is sitting next to him. Their conversation is loud. Aside from them, Farea sees a black woman conversing with a puppet and a big man smoking two cigars at once.

A long rectangular table with five chairs spaced along one side sits on the far end of the room. She immediately recognizes Herm, who is sitting on the far right, reading his book. Next to him, a tall woman is clipping her nails. The center chair is vacant. Next to it, a blonde man is putting on makeup, and a person who is sleeping on the table occupies the far left chair. Behind them, a big sofa chair with golden contours and purple cushions is facing an enormous window.

No one seems to have noticed Farea, Arine, and Luze enter. Suddenly, Arine grabs Farea's hand and starts walking towards the big man. Farea notices two wooden chairs near him and sits. Luze, sighing a little bit, takes a seat next to Eran.

"My boy, Eran, how's your day going?" Luze says while clapping his hand on Eran's shoulder.

Furiously, Eran shakes off his greeting.

"Luze, you fucking disgrace. Don't talk to me. Not in the mood!" he growls while glaring at Terris. She, on the other hand, smiles at him and shows him the pouch. Eran balls up his fists in anger.

Next to Farea, the stench of cigars spirals upwards, mixing in her head with a sensation of nausea. The man has only recently lit his smoking sticks, but he does not breathe from them. Instead, he closes his eyes and just lets both cigars burn. He is wearing a black beanie that covers his white hair. His face, rough and little bit wrinkled, is nearly calm. His thick eyebrows give him a bear-like look. Three parallel scars, probably from a big feline, stretch down his right cheek. Bulky, his clothes do not seem to fit him well. His brown coat, with fur on the hood, hangs behind his chair.

"It's Frose," Arine whispers. "He comes from Colorado."

Farea looks around and rests her gaze on the table on the far end. Everyone there seems to be minding their own business. Deducing from the number of seats, Farea realizes those people must be members of the Big Five, while the cushioned master chair is probably for L. Zetius, however, is nowhere to be seen. Neither are Bowen and Yum. "Are they really planning to come back late from their stroll?" she wonders, frowning her brow.

"Comrades..." says a very heavy voice from the master chair.

Immediately, conversation ceases, and everyone looks up towards the table on the far end. The Big Five stop fooling around and sit up straight. Fingers interlocked, they look straight back at their followers.

“Thank you for your effort, for those who survived...”

“But for the others... too bad heaven doesn't exist when you are dead.”

“Mars is near, extremely near. But blood has been spilled.”

“WE ARE AT WAR!”

[EARTH;; Stack of Coordinates]

“What are we supposed to be looking for?”

Her own voice—more than six years younger—her own eyes scanning the barren wasteland beyond Helga in search of something other than a sunset over the Pacific to make this trip to Vandenberg worth their while.

She and Ben and Mollie had somehow managed to get as far as Indian River in their attempt to visit KSC, but, due to some combination of intuition and a thunderstorm, they had decided to just keep driving, reducing their entire adventure to a waste of time and hydrogen gas...

“What do you think is over there?”

Her own voice—a few months earlier this time, and several thousand miles closer to the Atlantic—her own eyes peering out the window in the back of Helga through lightning-lit gloom, searching once again for Indian River, a dark expanse of raging waves that has all but disappeared in the distance.

Silence.

Not even an attempt at an answer from Ben or Mollie.

“Dad must have put these coordinates at the top of the List for a reason.”

Her own voice again—quiet—haunted by a shadow of doubt.

“Are you sure it's a list, Athie?”

Ben's voice—even quieter—his brow furrowed deep, his eyes aglow with a newborn idea.

“What else could it be?”

Her own voice again.

“A stack.”

Athie blinks, and Ben goes on.

“Because a stack is first-in, first-out; the item stored at the top gets pulled last.”

Slow nod.

“In that case, KSC was never supposed to be our first stop.”

Mollie's voice—soft and low—her gaze darkened with weariness and confusion, because she has convinced herself that Trey's hand-written mess of ink blotches and ASCII codes is somehow significant. She has taught her daughter and her adopted son to believe it, too, and she has dragged Athie and Ben across America, through hell and high water, just to give up and turn around before reaching their final destination.

But Athie still has faith in their mission; she still believes that her father has led them here for a reason... Perhaps they are simply not ready to understand.

"Then what was supposed to be our first stop?"

Her own voice again—her neck craned towards those four old sheets of paper between herself and Ben in the back seat.

Ben places his left little finger on the line of hexadecimal numbers at the end of the List and blinks.

"Vandenberg Air Force Base, California."

Athie grins at thoughts of raiding vineyards and eating fresh grapes for breakfast; she cannot wait to get there...

"What are we supposed to find here?"

Her own voice again—back to being more than three thousand miles west of KSC—her gaze shifting away from Vandenberg and returning to her companions inside of Helga.

Ben shrugs, as Mollie buries her exhausted eyes behind her hands and shakes her head.

Athie stares at those crumpled sheets of paper beside her, half-expecting her father to give her a hint right then and there.

Nothing.

So she snatches up an earpiece and a pair of night-vision lenses, and she climbs out of Helga. She knows her father has led them here for a reason, and she is desperate to understand.

"I want to check this place out before we go."

In her dream, she is standing outside of the First Mars building again... digging her heels into dry California soil... staring up at ash-smearred glass windows in dust-dulled stainless steel frames... desiring to just step inside... All she has to do is open the door.

She never does.

Athie kicks herself in her sleep; she has never made that same mistake again.

Something close to consciousness flows into her mind, and her memories of Vandenberg and Indian River begin to drift away. She hears a voice above her—someone strange—somewhere distant. Then a wave of exhaustion pulls her back under, and her subconscious continues to feed her memories... another building... more closed doors and clouded windows... another bold step into an abandoned space center... more unfinished rocket parts and unanswerable questions...

another stack of data disks to slip into Casper... more mission plans and CAD drawings and contracts and test results... another clue closer to understanding the List.

She remembers how she and Mollie and (after some convincing) Ben had made it their mission to solve the mystery of it... to figure out why her father had bothered to leave these sheets of scratch paper covered with coordinates behind... to pinpoint what he had hoped to have them do at each of those places and then get it done.

Since then, her life has been a blur of passing time and pulling pairs of coordinates off the List that was made to be read as a stack, interspersed with patches of non-stop driving along dilapidated interstates and thorough exploration of each obliterated and abandoned First Mars outpost in turn...

She hopes this adventure out to KSC gets them more than just another clue.

[EARTH;; Shopping Spree]

“How much longer, Mollie?” Benjamin whines, squirming around like a convict in an electric chair beside her.

Mollie clenches her hands around the steering wheel even tighter. Then she takes a deep breath and reminds herself to remain calm. “Next exit.”

Benjamin whimpers. “Promise?”

“I promise!” Mollie huffs, gritting her teeth. She has just about had it with him at this point! “We will stop at the next exit no matter what.”

Benjamin crosses his legs even tighter and nods.

Mollie is silent and tense for just a moment more. Then she sighs—she knows he cannot help it... It still pains her to remember why.

“Mollie? Mollie O’Briden?”

She greets her old project partner, Dr. Rachel Bates, with a sheepish grin and allows herself to be swallowed in an overexcited embrace.

“We thought you’d be gone for good!”

Mollie feels her smile fade. “I heard about Lawrence and Patricia,” she mumbles, almost choking on her words, “and I came back for Benjamin... I think... according to their will...”

Bates hugs her even tighter. “Yeah... That’s one thing that hasn’t changed.”

Mollie nods.

Then Bates pulls back and looks her straight in the eye. “But you might not want to take him with you... You and Athie might be better off just leaving him here.”

Mollie furrows her brow, almost glaring back at Bates. “Why in the universe would we want to abandon him like that?”

Bates lowers her gaze and fidgets a little. “We... some of us... one of those stupid psychologists from Building 13... we just think he might be... Special... like due to, I don’t know, Autism... or something...”

Mollie takes a step away from Bates and folds her arms across her chest. “Then I think he might be best off coming with us.”

Mollie snaps back to the present, shaking her most recent recollection of McGregor out of her mind. She had hated that visit—March 2, 2043—too cold for Texas and too grim to call home, because even her former best friends had seemed inhuman to her then—amazing what ten years of distress and desperation can do to certain people.

She spots a mangled green exit sign up ahead. With a quick glance at the final fading farewell from the sunken golden-orange sun, she refocuses her attention on the darkening road and crosses her fingers, thinking, “This better be a safe place for us to stop.”

“Five more minutes,” she utters, steering the vehicle on to the exit ramp.

Benjamin squeezes his eyes shut and nods. “Okay.”

Mollie scans the bleak Georgia horizon for some semblance of a shelter—there! Little more than a speck in the distance now, windows or something glimmering in twilight. She slams on the accelerator, flashing a grin at Benjamin. “Count down from sixty; I see a place to stop!”

He evades her eyes, screws up his face, and begins to hum.

“What the fuck is wrong with him?”

Mollie glares over at William—the man with the dog and the baseball cap from Miami who had been run off a road out in Sunnyvale, California, then robbed of almost everything he owned and left for dead in his overturned sedan—the self-proclaimed engineer with no proof of a position at Lockheed Martin or a graduate degree from Caltech who has established himself among them in less than seventy-two hours since his rescue as little more than a useless, arrogant, ungracious scoundrel... Some part of her still wishes that she and Athie and Benjamin had never bothered to save him.

“Nothing!” Athie exclaims, shoving William away from Benjamin.

“Then why the fuck is he acting like this?” William presses. He narrows his eyes at Athie and folds his arms across his chest, flexing his massive muscles and looming over her like a monster.

“Because Mollie asked him to crunch some more numbers for us about two minutes before you decided to wake up and keep on harassing us with your presence, and he needs to concentrate in order to count! So you should just shut up and respect that now,” Athie retorts, undaunted by his harmless brawn.

“Tell me something first,” he snarls, shooting another loathsome sneer at Ben. “Am I stuck living with a bat-shit crazy little teenage bastard or a goddamned retard?”

WHACK!

Mollie gapes at Athie, as William clutches his jaw.

He opens his mouth again, and Athie raises her fists another inch higher. Then he swallows his retort and wipes a trickle of blood away from his upper lip.

“Flip us off all you want, Gator,” Athie seethes, “but if you ever use that word on him again, then I will cut out your tongue and strangle you until your face is purple and all those blood vessels in your eyes are popped!”

Mollie suppresses a grin, as she guides the vehicle to a jarring halt in front of a greenhouse—one of almost a hundred other cracked and caving glass structures built up on over-polluted earth that might have once belonged to a cotton plantation. *‘I am so glad those two are more civil to each other now,’* she muses, shaking her head.

Benjamin flings open the passenger-side door and leaps outside, half-sprinting, half-waddling, over to the back end of the vehicle, Bess hard on his heels. Then he pulls down his pants and relieves himself all over the grassless ground.

Mollie cuts power to the electric motor, tucks a few silver frizzes back behind her ears, and begins to gather canteens and collapsible storage containers, as she waits for Benjamin to provide her with an all-clear.

She hopes a few of these greenhouses still have something useful left within them; after such a rotten morning, she imagines she and Benjamin are due to receive a dose of good luck.

“Better now, Mollie,” Benjamin mumbles, tapping on the driver-side window.

Mollie opens the door and joins him outside. “Then grab a rucksack—we have quite a bit of shopping to do before we head back to KSC!”

Benjamin freezes, a look of absolute terror replacing his almost-relaxed expression in less than a heartbeat. “No.”

Mollie purses her lips. “We have weapons... ammunition... two hands each that know how to hold a gun... and we have Bess to warn us about incoming poachers or drones.” She remembers learning a little something about greenhouse irrigation systems back in McGregor—she and Bates had helped design the ones for the new units on Mars—robotic drippers to distribute water droplets right to roots so that nothing ever went to waste¹¹⁰. “There might be some water left out there... There might even be something good to eat.”

Benjamin stares at his stomach, and Mollie hears a soft gurgle.

“If we find enough,” she continues, “then all of us can have a double-ration tomorrow to celebrate our rendezvous.”

Benjamin pulls out his Rubik’s Cube and begins to solve and unsolve and solve it again.

Mollie stares at the sunken sun and the indigo sky for a moment, listening to the bugs and the breeze and the little voice in her head that seems to be convinced that she and Benjamin and Bess are safe. Then she digs four loaded handguns out of the vehicle, slings a rucksack packed with cylindrical canteens and flattened-out containers over her shoulders, and beckons Bess to her

¹¹⁰ (FarmTek 2014)

side. With a final nod of satisfaction towards her hasty preparations, she turns to Ben and offers him a pair of guns and a rucksack identical to her own.

He looks at them for a long time. Then he returns his Rubik's Cube to his pocket and hangs his head. "Okay."

[Mars;; 4]

In her mind, she sees Brutus' face, friendly and sweet, with deep brown eyes like cocoa.

Fionna has to remind herself that it isn't Brutus. It isn't anything. It's an *it*. Just like everything else in the Simulation. Just like everything else here.

Just like that robot with the blue eyes.

"Nothing," she says, turning to him with her hands behind her back, utilizing a familiar yet uncomfortable pose she reserves for her superiors. Kirkpatrick looks at her like she's suddenly waved something foul underneath his nose.

He sighs. "Fii, the Simulation isn't designed to cause stress. It's designed to keep everyone in a low energy state—"

"—so we can survive until we can get help. I know the reason. Everyone knows the reason."

The man places a hand on her shoulder. "Then you know that it's not designed to be stressful. If it was stressing you out that badly, that's a serious design flaw."

Her arms are shaking; it's been so long since she's last stood this way.

"Fii. Fionna."

His touch is much gentler.

"I'm asking you because I'm worried."

She is silent.

"Everyone on this station... I consider you all to be like my children. I have to look out for each of you. If there's something going wrong—"

"With all due respect, Doctor Kirkpatrick," Fionna interrupts. He flinches like she's just slapped him. "You're not my father."

He nods and strokes his face, turning away from her. Her heart aches.

"Thank you for your concern," she continues, "But I'm fine."

The room is filled with a heavy silence. Her spine is starting to hurt from her digging her arms into her back and puffing out her chest, deeply exaggerating the curve of her back. But she stands there, keeping the stance until Kirkpatrick looks at her again.

"... You're right, I'm not your dad. That would be weird, wouldn't it?"

Fionna bites her lip, fighting off a rebellious smile. She stands perfectly still.

Kirkpatrick stares at her and chuckles softly. "Goodbye, Fii."

"...Goodbye, Christian."

Fionna turns and leaves the room, finally relaxing her arms and spine.

[EARTH;; Missed Messages from Mars]

“Nellie...”

Her voice.

“Nellie!”

Desperate... distant...

“Nellie, don’t go!”

Her eyes...

“Don’t go! Don’t leave us alone!”

“Where is she?”

His voice is rapid and breathless and desperate, and something about it seems to be making her pulse quicken.

“Who?” a second voice inquires.

“He mentioned a girl with mechanical legs—Dom and Kip and I just finished up with an interrogation—Chief pulled us all aside after we got back and ordered us to find out more about his two companions, and, after he went on about some red-head runner who smashed her head in an accident and puked on his shoes, he mentioned a girl with purple-like-lavender eyes and mechanical legs...” He pauses for a moment to suck in a chestful of oxygen. “Where is she?”

“Wow.”

A voice—strange—male... Jack—before she knew his name.

“Just... Wow.”

Light—dark—too much light—not enough dark... Fluttering eyelids.

“I mean, I had your left thigh sliced wide open—the vastus medialis and the rectus femoris pinned over to the vastus lateralis—and I was sawing away at your femur, and, for a second there, everything just flat-lined... and... I thought you were a goner...”

Light—pain—too much light—unbearable pain... Consciousness.

“A goner too damned stubborn to get gone.”

Her own voice—more a mumbled croak than an intelligible utterance—then his laugh—deep and full and warm and wonderful.

“In that case... welcome back from the dead!”

Dead... except for her own heart pounding against her ribs—like a wild animal attempting to bust out of a cage.

Clean, almost sterile, antiseptic sort of medical-center scent surrounding her—too clean—too sterile.

Cotton—not her own old polyester shirt—his cotton—draped over her chest and hanging off her hips.

She cannot feel her own feet... She opens her eyes and squints at her legs and attempts to wiggle her toes... but she has no toes left to wiggle.

“What have you done?!”

Her own voice again—a hoarse shriek—then his wide emerald eyes blinking at her—startled—innocent.

“What the heck have you done to me?!”

Her own worst fears reverberating throughout his vehicle alongside her roar, her spine pressed up against his passenger side door, her hands groping for her firearms—

“I...”

But all of her holsters are gone...

“Nell...?”

She just barely hears him utter her name, and, all of a sudden, his voice seems a lot more familiar... She wishes she were conscious enough to picture his face.

“You know her!”

Then she notices a certain understanding in his eyes.

“Listen—I didn’t want to have to slice off your pants or your undies without your permission, but you were worse than unconscious, and everything you had on was soaked through and covered with dirt and blood and other roadside muck—all of it incubators for bacteria—and everything else in here was almost OR-clean, so... you know, I sort of had to... dispose of things... ASAP... and I figured, since I was going to have to keep you under for a while, a clean set of dry clothes would be more comfortable for you to sleep in.”

Her mind is racing fast enough to beat his vehicle down the road, and her fingers are tightening around his door handle for no good reason at all... Then everything begins to swirl before her like a drug-induced high.

“I stashed your guns, or whatever they are, in the back.”

She glances towards his back seat and glimpses mud-caked metal.

“What about...?”

She is unable to finish.

Dizziness... nausea... a swimming mirage of her aching thighs ending in identical hollows of cotton-lined solid—artificial structure down to her non-existent toes—just barely motorized enough to bend at their knees—twenty-first century peg legs... at best...

“Nell...”

His voice is closer now, and his name seems to be dancing on the tip of her tongue... She almost remembers how it sounds.

“Wait-wait-wait,” his comrade interjects. “You sleep-talk about that girl all the time!”

“Yeah...”

All of a sudden, their conversation switches a lightbulb on in her head, and, for some reason, she cannot help but smile. Then his name plops down right smack in the middle of her mouth. Her first instinct is to doubt, but her second is to hope... *‘Jack?’*

“And you think *this* is her?”

“No, Doc, I know this is her.”

“Better to be legless than dead.”

His voice again—soft... apologetic.

“You mean that?”

Her own voice—harsh—doubtful—thankless.

“Yeah—a hundred percent—I mean, I found you all crushed up under that overturned wreck, half-drowned in your own blood—had to be close to three hours after the crash—and you were still breathing! So—okay, call me crazy, but, in spite of everything wrong with this world, I still believe in something like fate, and, once I felt your pulse, I just... I knew that today wasn’t supposed to be your day to die—so I decided to keep you alive.”

Her gaze sort of aligns with his, and she feels her pulse quicken a little.

“Um... Thanks...”

“Who the fuck is ‘Nellie’?” Will utters. His voice is distant and pained; she assumes something awful must have happened since...

“What are *you* asking *us* for?” Doc retorts. “You showed up with her!”

“So little miss Gunflinger over there has a real name?” Will grunts.

“Yeah...”

Jack—she is sure of it now—right there, right next to her, right where he is supposed to be... where he should have been all along.

“Jack,” she croaks, attempting in vain to force her eyelids open.

“Yeah!”

Light—bright enough to make her eyes ache.

Something coarse but cushy seems to be pressing into her back and supporting her head. She blinks a few times, but her vision remains splotchy and blurred. She can almost discern a ceiling and four walls above her, all as stark and white as a hospital operating room.

She tries to lift her head up, desperate to catch a glimpse of Jack. Then everything begins to spin.

Nellie groans.

“Slow it down, Nell,” he murmurs beside her, grasping her hand between both of his. She feels her pulse quicken. “I’m here—I’m right here, and I’m not going anywhere.”

Her thoughts continue to race, as tingles of nervous excitement begin to shoot up her arm. She rotates her face towards his voice... Then his gaze aligns with hers, and her throat closes up, and her heart threatens to leap out of her chest. She stares at him, and he stares at her, and, somehow, she finds enough strength to sit up. She fumbles for words—phrases—questions—something to express... Then his arms clutch her to his chest, and she melts into his embrace.

“Um, Willie and I are going to, um, give you two a minute,” Doc murmurs.

Nellie half-hears a pair of shoes shuffling across a carpeted floor.

“Keep fucking with me—” Will hisses.

“Get over yourself!”

Their voices are low and distant, all at once there and not there. ‘*Jack is here,*’ she thinks, soaking in his presence like a wilting flower sucking up water in a downpour. Their footsteps are soft and fast and soon fade away.

Then Nellie begins to sob.

She feels Jack flex his muscles—warm and strong—against her skin, as he lifts her on to her old-fashioned bionic plunder from Boston, not a pair of those lifelike prosthetic legs that he had made just for her; she had loved those legs even before he had begun to consider them close to complete. He hugs her even closer to him. Then she feels his arms tense up a little—more bones protruding from her skin than he would remember. She buries her face in his shoulder and listens to his heartbeat—rapid and loud and more alive and well than she has ever dared to dream since...

“What... *happened*... to you?” she gasps, tears flowing down her face faster than snow melting off a mountain in spring.

She feels his breath catch in his throat.

“You told me to run...” she whispers into his shirt. “You told me to run back and grab more ammo... So I did... and... and... and then you were... *gone*...”

Silence—except for her sobbing... her sniffles and shaky breaths. Then both of them are murmuring excuses and apologies to one another, and his hands are stroking her back and smoothing her hair. She closes her eyes, as his lips begin to brush away her tears. Intelligible words and comprehensive thoughts soon evade her. Then his lips lock with hers, and everything else around them ceases to exist...

“Fuck.”

Nellie pulls away from Jack and blushes, greeting Will and his entourage of not-quite-approving onlookers with a sheepish grin. She glimpses another occupied cot in the room, as she peruses each of those no-nonsense faces all clustered together around a pair of open doors.

Jack mimics her expression, as he faces his superiors.

“That settles that,” a stout greyish man declares, planting himself another step closer to Nellie and Jack. His eyes are sparkling silver in the center of his almost-hairless head, and his voice is as sweet as a ripe orange and as merry as sunshine on lush green grass.

“But—Chief—!”

The greyish man raises his hand, and the sputtering pink woman behind him reverts to being silent.

“Ooh, J, you owe me big time for this one,” a sharp-nosed woman opposite them states, bobbing her silver-streaked high-bun and placing a hand on her slender hip. “I picked this group up near that graveyard-for-houses over on 407 and decided to keep a quadcopter on them because I was almost entertained by their conversation... Then I heard one of them mention our Hall of Fame.”

Jack meets her unwavering gaze, something mocking and mischievous glimmering deep within his emerald eyes. “Then *Billy* sounded the alarm.”

“Hey! You asked *me* to fill in for you, and *I* found them first!” she retorts.

Jack chuckles at her hot red face and grins. “Thanks, Rose.”

Rolling her chocolate-brown eyes at him, Rose replies with an exasperated huff. “Two meal rations and a new hatchet—new—not just sharpened—by, uh, the middle of next week—Wednesday. I want you to get them to me before noon. Cool?”

“Cooler than a cold front,” Jack replies.

“Cool.” With a respectful sort of nod to the greyish man across from her, Rose meanders through an open door and disappears from sight.

Nellie turns to Jack, a million and one questions bouncing about her head and clambering towards her eyes—she wants to ask them all—she needs answers to them all—she has to figure out... she has to know... “What the heck is a *meal* ration?”

She feels a lot of different eyes land on her face—bright eyes over rosy cheeks and clean teeth and muscular shoulders and agile limbs... She wonders just how green her complexion looks to them now.

Jack slips an arm around her waist—too little flesh and too much bone—and his touch comforts her as much as her emaciated figure must worry him.

Nellie shakes her head. “Never mind... What time is it?”

Someone snorts, and Nellie feels her stomach tie itself in a knot.

“You three missed your first rendezvous,” the greyish man states, his voice as comforting as his words are chilling and cold. “You have about eight hours to go before you miss your next one, and no vehicle of ours is going to risk a trip out to I-95 just to drop off a few good-for-nothing space-nerds.”

Nellie grits her teeth and shoots a knowing glance at Will... It is already obvious to her that he has revealed too much. She wonders how much time and how little effort his interrogators needed to pry it all out of him. “So you want us to walk back,” Nellie concludes.

“Not yet,” the greyish man replies.

Nellie raises her eyebrows at him, and he sort of smiles.

“First... Kennedy Space Center,” he muses, glancing from Nellie to Will to Athie, who is still curled up and fast asleep on a cot behind them. He chuckles to himself and grins even wider. “Last time I ventured out there, my sisters were wearing diapers, and our President was Black! In those days, most folks in this country still appreciated space—NASA, not so much, but SpaceX and First Mars and all those other up-and-coming companies planning to launch people and probes and what-not out to Mars and Jupiter... Folks used to dig that stuff more than dirt. Then something spooked us all.”

‘Death,’ Nellie thinks, dropping her gaze to the floor. *‘Because people tend to realize how fragile life is once living gets hard.’*

“We sent some drones over there a week or so after the attacks to check for survivors,” the greyish man continues, “but...”

“But what?”

Everyone turns to Athie, as she rolls over on her cot and lifts her head away from a smallish mountain of pillows.

“We steered them too close to the ground at one point,” another voice replies, “and—”

“Altitude was fine when we lost them,” a third voice grunts. “Something shot them down—something... artificial... because none of them picked up a single sign of human life before their transceivers crapped out.”

“Last mission we ever sent to Kennedy,” the greyish man mumbles. “Last mission we could ever afford to send to Kennedy...”

“Takes a lot to keep up a fleet of drones,” Jack explains, grinning down at Nellie. “Too many STEM-Heads out there that know how to hack into them and stuff.”

Nellie blushes. He knows that she and Omni are guilty of a lot more than blasting apart a drone or two. She forces herself to realign her gaze with that of the greyish man. “So what do you want us to do there... *Chief?*”

Chief grins at her, folding his time-withered arms over his broad stomach. “Gear, how many scuba suits do we have on hand now?”

A smallish woman with a shadow of a wrinkle outside of either eye perks her head up and places a slim finger on her pointed chin. “Eight... We got eight left... But we only got enough good oxygen filters left for two to make it all the way to Merritt Island and back. And two’s kind of pushing it, Chief, but this ain’t something anyone here can do alone.”

Chief nods, and his grin begins to droop into a scheming-frown.

“Nell and I can go,” Jack offers, exchanging a mischievous-excited grin with Nellie.

She feels her insides flutter.

“Besides,” Jack continues, “Doc’s going to want to reexamine our redhead now that she’s conscious.”

Will scoffs at them, and Nellie rolls her eyes. “What the fuck do you Ignorants even know about KSC?” he snarls.

“At least as much as you Leeches,” Nellie snaps, narrowing her eyes at him.

Will snorts.

“You ever been there before?” Nellie shoots back, raising an eyebrow. He just glowers at her, but she holds his gaze until he blinks. “Thought so.”

“Ben knows that place inside and out,” Will growls through gritted teeth.

“But you’re not Ben, and his brain isn’t here to help us out right now,” Nellie hisses. “Plus you and Athie got to get to our rendezvous before seventeen hundred so that Mollie knows you’re alive... Then I want my vehicle back.”

“How the fuck do you expect us to make that happen?”

Nellie forces herself to hold his haughty glower. “Figure it out. Jack and I will be waiting for you at KSC.”

Chief takes another step into the room. “What kind of... vehicle... are we talking about here?”

Nellie gulps, clinging a little closer to Jack. “Just a...”

Chief raises an eyebrow at her, and Nellie clenches her jaw shut. *'After all that shit I went through to get it I have no intention of ever giving it up to a bunch of Brains like you... Bad enough that I had to leave it with a couple of Leeches back on I-95!'*

"Worst maybe-mistake I've made since deciding to raid Fort Dix for supplies and a new vehicle," she mutters aloud.

Jack grins at her. "You talking to yourself again?" he whispers, his lips brushing her ear with every word.

Nellie feels her face heat up even more. "Let's go."

"Not so fast," Chief utters, planting his blubber in front of her. "You have not answered our question yet... Two more names given, so our passenger count is at least five; great reluctance to respond, so our subject must be of some value... What kind of vehicle—?"

"Do you want us to bring anything back from Kennedy?" Jack inquires.

Chief glares at him for a moment, still rolling the rest of his question around between his tongue and the roof of his mouth. "Find our drones... and figure out what brought them down."

"Will do," Jack replies. With a quick grin at his greyish superior, he guides Nellie past all of those other Brains and into a grey-walled and grey-carpeted corridor¹¹¹¹¹². He walks in silence for a while, his strides long and swift. Then, all of a sudden, he tugs her through an almost-white double-door and clutches her to his chest and kisses her until both of them are breathless and red.

Nellie cannot help but smile.

"Been too long," he gasps, smiling back at her.

"Yep," she murmurs, resting her head on his heart. "I forgot we even knew how to kiss like that."

Jack laughs.

Then Nellie remembers what else she had wanted to ask, and her smile almost disappears. "Do you trust him?" she mutters, her voice low and soft, her lips nearly immobile.

Jack brushes his lips across her forehead. "Not at all."

"And how long have you been living under his roof?"

Jack smiles even wider. "Long enough for him to trust me."

Nellie meets his mischievous gaze and raises an eyebrow.

"Doc trusts me," Jack murmurs, "and Chief trusts Doc, so..."

Nellie nods. "Got it... Ready to go?"

Jack pouts at her and pecks her lips. "Not quite."

"Okay," Nellie replies, slipping her fingers in between his and pulling him towards that double-door. "Let's go."

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¹¹¹ (American Police Hall of Fame and Museum 2010)

¹¹² (Kiley 2015)

Indian River is dull and brown in spite of a brilliant mid-morning sun and a cloudless blue sky above. The water is warm and brackish, but Nellie is thankful to be wearing a skin-tight neoprene shield from head to artificial toe. She and Jack wade into those undulating lagoon waves, gill masks clamped around their faces, bionic fins clutched in either hand¹¹³, sea-creature repellants and filled canteens and food packs strapped to their backs, until all but their heads have disappeared. Then they clip their fins to their feet, power up their oxygen filters, and dive.

“You read me?”

Nellie hears Jack’s voice crackle in her ears, and she smiles through her gill mask. “Yep.”

“Awesome!” he exclaims. “Gear warned me that most of these masks are pretty much out of commission—no comm transceivers, no oxygen filters, no this, no that—I’m just glad these two work!”

“Me, too.”

“Hold still for a sec,” Jack says, as he drifts towards her feet. “I want to make some time—sooner we get to shore, longer our oxygen filters last on our way back to base.”

Nellie nods and allows her body to sink a little.

Jack catches her neoprene-shrouded carbon fiber ankles and fiddles with something on her fins. Then he kicks his own fins into a new gear and propels his body forward like some kind of turbo-charged jellyfish. “Come on!”

Nellie wriggles her hips, and her fins launch her entire being forward. “Wow!”

Jack chuckles. “What do you think?”

“You must have made them,” Nellie states, “because they work like magic.”

She imagines him shrugging or something—humble and nonchalant, yet grateful for the compliment.

“So... You mentioned something about a maybe-mistake... Fort Dix... new vehicle...?”

Nellie kicks herself a half-length ahead. “Anyone listening in to our conversation?”

Jack catches up to her. “No.”

“You sure?”

“Yeah.”

Nellie purses her lips. “You positive?”

“Yeah,” Jack repeats. “Before we left, Double-E pulled me aside to warn me not to let you swim too far ahead or anything, remember? Because these transceivers are limited to a range of about a hundred feet.”

Nellie nods to herself. “I had jacked some piece-of-crap electric-vehicle experiment from the Museum of Science in Boston—along with these legs—and a new spitter—and I was heading back down south for some reason.”

“Fate,” Jack interjects, and Nellie smiles.

“So I was passing through Jersey, and I noticed this sign for Dix-McGuire-Lakehurst, and I thought, ‘I could use some military-grade equipment because this shit I have on hand is not going to get me out of another drone encounter in one piece.’ So then I decided to raid Fort Dix... with

¹¹³ (Barlow 2006)

one lamer-than-lame handgun and one close-to-decent rifle... and there were still people living on base..."

"Nell!" Jack exclaims. "What the heck were you thinking?"

Nellie makes a face. "I drove off in a JLTV with a LiDAR, a dashboard holo-projector, and an Omni-compatible q-unit, plus two army-strong firearm and ammo spitters, six graphene vests, and more food than I'd been able to get my hands on in over three months!"

"Wow."

"Yep," Nellie nods. "Worth all eight of those bullet wounds and at least half of those explosion burns."

"Nell..."

"What?"

She imagines Jack shaking his head at her.

"You got a better adventure to share?" she teases.

Jack is quiet.

Nellie wishes she were able to give him a hug or something right then and there. "Anything I can do to help?" she whispers into her gill mask.

Jack says nothing for a long time. "I missed you, Nell," he mumbles at last. "I missed you a lot."

. . . .

Land.

The water is shallow enough for them to remove their bionic fins and poke their heads through the undulating waves and see land.

"Like a tornado hit," Jack mutters, removing his gill mask and wading towards a debris-ridden stretch of sand and overgrown weeds.

Nellie clips her own gill mask to her scuba suit and nods in agreement.

Silence.

Except for a few waves sloshing into shore, there is an eerie absence of Florida sounds and a deafening sort of death-like silence reigning over KSC. Nellie glimpses a few structures large enough to be buildings ahead of her, and she begins to wonder just how much of them might be left for her and Jack to explore. Then she notices something—a heap of fractured metal and broken plastic—under a tangle of weeds, and she creeps towards it.

"Um... Jack?"

He jogs over to her side and traces her gaze to that thing collapsed upon the ground. "What—?"

"I think this might have been what downed those drones," Nellie states, "because a .75 rifle like that can give blanks enough energy to take out a fighter jet from a mile below sea level."

Jack blinks at it—robot—humanoid machine with one busted-up finger still clamped around a trigger of a worse-than-lethal gun.

Nellie nudges Jack another two feet away from that muzzle then lowers herself to the ground, cradles that rifle in her arms, and releases its magazine. “Six rounds left,” she utters, grinning up at Jack. She clips its magazine back in place and returns to her feet, new mechanism of self-defense in hand. “I bet we find at least a hundred more.”

“Rounds?”

“Robots,” Nellie replies. She marches on, beckoning Jack to follow. “And I want to find all of them!”

Jack shrugs. “Think anything might be left of those drones?”

Nellie shakes her head. “Nothing worth lugging back across Indian River for Chief.”

“Yeah...” Then Jack grins. “Let’s go look for a rocket!”

They wander closer to those buildings, trudging along a road of rubble through wilting underbrush and past one robot corpse after another. Everything reeks of salt-water and decay, and the few structures that remain upright seem to be teetering on the verge of collapse. The rest of the place is as crumbled and charred as a forest after a wildfire.

Nellie almost shivers. “Going in?” she asks, as she and Jack pause before an open door beneath a sagging glass-and-concrete behemoth named ATLANTIS.

“Yeah... Going in.”

The interior is cool and dim. Through her night-vision lenses, she can read the captions on each of the giant billboard-like exhibits mounted on its blue-painted walls, and she can make out the shape of a crashed-down, crushed-up shuttle in the center of it all.

“Almost seems like it used to hang from the ceiling,” Jack whispers, picking his way towards its enormous black-tipped nose.

“Are we supposed to believe that Leeches actually launched themselves into space in this thing?” Nellie muses.

Jack shrugs. “Might have been possible before the Collapse.”

“Think all of those other buildings look this bad?”

Jack returns to her side and grins. “I guess we get to find out.”

They break at sunset—something of a spectacle tonight—pink and purple and orange and gold melting together overhead and a luminous scarlet orb sinking into Earth. Jack and Nellie are curled-up and cuddling together on top of a launch pad beneath it all.

“Which one was your favorite?” Nellie asks, swallowing another bite of the so-called meal-ration from the so-called ex-officer underground that she and Jack have decided to split for dinner.

“I kind of liked that underground lab,” Jack admits, grinning back at Nellie.

She shakes her head. “Like a Heaven just for Leeches... Place gave me the creeps.”

“You notice its name?” Jack inquires, nibbling at his dinner again.

“No.”

Jack swallows. “Cerebrum.”

“Sounds like one of your anatomical terms.”

“Yeah,” Jack chuckles, “because it is.”

“Figures.”

“Part of the brain we use to think and reason and stuff—what makes people human.”

Nellie is quiet for a bit. “I liked that NASA one better.”

“Launch Control Center?”

“That one had a name?”

Jack laughs. “All of them had names!”

Nellie rolls her eyes. “Launch Control Center... I liked it because it was loud—like it still had power.”

Jack nods. “Cerebrum was kind of... quiet...”

“Like it was dead,” Nellie adds, “like just about everything else on this island.”

“We should have gone down another level while we were in it.”

“We should have gone up another level while we were in Launch Control Center!” Nellie retorts. “I swear I heard something running up there.”

“We can check it out again tomorrow,” Jack offers.

Nellie glances back at its glinting windows and furrows her brow. Then she places her pointer finger on Jack’s chin and turns his face towards Launch Control Center and all those little blinking lights within it.

“Or we can check it out tonight.”

Nellie stuffs her last bite of food into her mouth and leaps up. “Let’s go.”

Jack scrambles to his feet and chases her down one flight of steep metal stairs after another until his diving shoes collide with grass. Then he and Nellie race towards that half-lit window three floors above ground, as a series of little red and green lights flickers on and off and on and off and on again.

Nellie charges through its entrance and sprints towards that stairwell. Then she races up to that more-than-half-collapsed third floor, picks her way through wires and rubble, and skids to a halt before a double-door—still ajar and seeming to welcome her into the room beyond. Nellie slips through, dragging Jack in behind her, and wanders towards the brightest of those blinking QLEDs—quantum dot LEDs—same as those light bulbs behind a digital computer screen or a q-unit monitor—high-tech and expensive, but also efficient, as expected in a place like this.

Jack gapes at all of those computer terminals, running his fingers across their dust-covered touchscreens and tracing their wires into the ash-veneered floor. “I thought this stuff was just a myth...” he breathes.

“What stuff?” Nellie quizzes. She narrows her eyes at a strange assortment of buttons and switches surrounding those lights.

“QuComm,” Jack replies.

Nellie stares at him. “You mean quantum for communications^{114,115,116?}”

¹¹⁴ (Yu, et al. 2015)

¹¹⁵ (DeGreve, et al. 2012)

¹¹⁶ (Augliere 2015)

“Yeah—entanglement—instantaneous transfer of information... Rumor across Indian River is that private space corporations had attempted to establish some kind of international QuComm system before the Collapse to keep in touch with people out on Mars, but no one over there seems to know whether or not it was ever up and running.”

Nellie nods at a q-unit beneath her fingers.

“Want to test it out?” Jack asks.

Nellie blinks. “Um...”

Then Jack presses a button above one of those red QLEDs, and a raspy voice shatters the quiet of the night like a bullet through a window pane.

“This is Andrew Vancoss, number sixty-three from Marian Settlement 4K-9G9. Requesting emergency aid. Repeat. Andrew Vancoss transmitting from 4K-9G9, requesting aid.”

Nellie glances at Jack, as he flips another switch on the communications terminal, grins at her, and gestures towards an audio receiver. She shakes her head, and he smiles even wider.

“Say something!” he whispers.

“Why?”

“Because someone out on *Mars* might say something back!”

Nellie shakes her head again. “Stop talking like a Leech.”

Jack rolls his eyes at her, as she begins to lean towards that audio receiver and open her mouth. She glances back at Jack one more time. Then she allows herself to smile.

“Hi... Andrew Vancoss... This is Nellie, no number, from Launch Control Center at KSC on Earth.”

[Part II;; COUNTDOWN TO LAUNCH]

[Mars;; 5]

SUBJECT = Andrew Vancoss; ID = AV63900;

It's rare that they're all awake together. As Andrew looks out into the small crowd of faces, all tired and hungry and recognizable in a strange way, each in various states of undernourishment, he can feel the quiet, solemn emotions they all share: The pressure of hopelessness on their shoulders. The pressing feeling of death bearing down on them faster than they can fight back. Each one of them looks so tired of this life, tired of the fact that their every action is just a momentary setback in their collective, inexorable march towards an unceremonious end on this alien planet.

I wonder how their bodies will fare in the vacuum of space.

Of course, they all knew when they signed up to be a part of this expedition that they were going to die on this planet, millions of kilometers away from Earth. It was, after all, supposed to be a one-way trip to Mars.

But, once upon a time, they used to hope to die of old age after establishing themselves and their settlement, fulfilled with all the ground-breaking discoveries they'd made and all the things they'd learned how to do with the bounty the Martian soil provided. When all this started, they wanted to have stories to tell their future children, as they grew up and established themselves as part of an actual colony.

None of them had ever planned for *everything* to go wrong.

I'm pretty sure they were prepared for a few setbacks here and there—maybe a robot breaking down, perhaps some issue establishing crops in Martian soil. But who on Earth could have prepared them for *this*? For the dust and the corrosive salts that spread across the solar panels like a fungus, gnawing away at their more fragile parts, carving into their internal mechanisms and disrupting the flow of their electrical currents?

They'd been prepared and trained to face a lot of things, yet I know they were never primed to face something like *this* at all. I guess at some point before they all left Earth, they'd allowed themselves to be deluded by their own fancies of being the first man or woman to discover pharmaceuticals that would make Mars a thousand times more valuable than it already was, or to melt down and mix metals into a new hyper-alloy that would revolutionize the industry. I guess the siren song of the mysterious red marble in the sky had lured them in, because here they are: Stranded in space. Devoid of the vision and the drive to discover anything more than the next Simulation-generated resource. Achieving nothing but empty stomachs and broken dreams.

Andrew rubs his face. It's in desperate need of a shave. Their razors are still fairly functional, perhaps the only things on this whole miserable rock that continue to work as

designed... Those primitive little non-electric razors. Although, thanks to their utter lack of disposable water, shaving is still a non-option.

Andrew walks up to a woman dressed in a lab coat heavily stained with browns, reds, and russets of every variety. Her hair is miraculously neat, pulled back into a tight bun, save for a single curl of brown hair that rests right in the middle of her face. She's the kind of woman that he would expect to wear thick-rimmed glasses, the kind of woman I would expect to want to wear them.

SUBJECT = Fiona Jameson; ID = FJ0273;

"Fionna," he croaks to get her attention. The woman turns to look at him with eyes like an owl. The freckles on her face remind him of the markings of the owls he would see sometimes in the backyard of his childhood home. "Do you know why everyone is awake? Is there something wrong with the servers?"

She shrugs. "I don't think so. It's an announcement, I think."

Her response only leaves him with more questions. What could possibly be happening that they need to attend an out-of-Simulation announcement for? It seems unnecessary to him. They're all aware of their situation; there's no use continuing to beat them over the head with it.

"Announcement of what?" he asks.

"Probably something else wrong with the pumps, that's what I think," the woman mutters. She crosses her arms and cocks out her hip, her lip curling back over her teeth in a scowl. "Seriously, does no one know how to repair an Oxygen Pump? They drilled it into us so much before we left, you'd think at least one of these hundred-odd 'top notch' scientists would've gotten it, right?" Fiona elbows him in such a way that he realizes he should be laughing right now. He manages a small smile, which seems to be enough for her. Then Fiona looks away and out at the other members of the settlement.

I know her sense of humor has always been bad, but her attitude has definitely gotten worse over time.

Andrew follows her gaze and sees Anikka sitting on the floor in the same faded blue overalls she's been wearing for a few months. At least, he *thinks* they're faded blue—they're stained with oil, coolant, and other mysterious liquids he isn't familiar with to the point that the original color is lost to his memory.

Fionna makes a noise in the back of her throat.

Andrew stays silent.

People seem to find the silence between them uncomfortable, even as the noise around them grows. It's been a while since the last time all of them were awake and together outside of the Simulation. It's been ages since they've seen each other's faces and touched each other's hands and actually unplugged from their prison of stasis. Using their voices to convey their thoughts instead of the terminal window is something each and every one of them seems to be relearning. Andrew can hear voices giving out mid-sentence from underuse, people losing track of themselves

in conversations and forgetting the next word they wanted to say. The air is thick with ‘uhm’s and ‘uhh’s, as the intricacies of language are gradually reinstalled in their minds.

Andrew looks out on the Martian landscape, regarding the sky he’s seen so many times.

At this point, I think he knows it better than the back of his own hand.

Then the sound of someone’s throat clearing tears through their slowly growing conversation as Desmond steps out in front of them.

SUBJECT = Desmond Odili; ID = DO03102;

Desmond’s most distinguishing feature is his height. He stands above most of the other scientists with a friendly face despite the gauntness of his features. Then again, the gauntness seems to be evolving into a ubiquitous trait of the settlement, just like being dirty and having a chronic case of cabin fever. Desmond’s voice is deep and clear, and it seems to resonate with the very foundations of the settlement, as if steel and thick, tempered glass were one with his very existence. Andrew feels a wave of relief just from seeing him up there, his dark skin stark against the white monitors and light steel plating. His hair and Anikka’s are very similar—wild and curled in tight corkscrews against their heads.

The man clears his throat again, this time in an atmosphere of almost enraptured silence. He gives a smile. Andrew notices that his teeth are yellow.

“Now everyone,” he starts, his voice, like everyone else’s, cracking and wheezing from disuse. Somehow, though, Andrew finds this a lot less grating than everyone else’s. “You’re probably wondering why you’re all standing here right now and not in the Simulation.”

“Yeah,” someone says. The person is scowling so hard that Andrew can hear it in his voice.

Desmond just smiles.

“Well, I’ve awakened all of you because I have wonderful news.” Desmond’s eyes seem to brighten, as he rubs his hands together, running his fingers against each other, as if he didn’t know what else to do with himself. He reminds Andrew of a large dog that thinks it’s still a puppy. Andrew finds his mind filling with images of what he vaguely remembers a dog looking like.

‘Do dogs look like Desmond?’

He thinks of a large hairless creature with a long tongue and figures that no, dogs probably don’t look like Desmond.

“What’s the news? That you’ve realized we can eat Martian soil? Because you know better than to wake us up for anything less than revolutionary, don’t you?” Fionna asks, her tone sharp enough to cut titanium.

Desmond doesn’t look even the slightest bit off put and raises a hand to her. ‘Wait,’ he seems to say without words. ‘Let me get to the announcement. It’s worth it.’

Then he speaks. “Everyone, we’ve received communications from Earth.”

There is silence; thin, fragile, and intermittently broken by harsh wind. It takes me a little longer than usual to process what this means for them.

Andrew stands there, dumbfounded.

His emotions are—he doesn't—words are failing him. The realization dawns on him that his SOS call has been heard, received, responded to, which means that there is still *something* on Earth—someone or something that remembers they're up here, that cares enough about their plight to respond and want to help... That thought blooms inside of him, opening and bursting and filling him with the most exquisite amount of hope that he's felt in a long time.

In that moment, Andrew knows he made the right choice. No matter what happens from here, he won't regret the choice he made all those days, or weeks, or months, or however long ago he reached out to them—no matter how long ago it was, he won't regret it.

But he stops before he gets ahead of himself. He closes his eyes and thinks logically about how much more time they might have before everything collapses on them. Their machines will probably hold out for a while longer; most were designed to outlast them, meant to watch over generations of settlers. But their food rations are finite and will soon vanish. Their water machines still run but can't really produce enough for all ninety of them.

'*Will our Earth comrades even be able to help?*' he wonders to himself, his forehead creasing with doubt.

'Even if they can help,' I think right back to him, 'will the aid get here before your food rations run out?'

Even now, at the moment when Earth and Mars are closest, we both know it would take a few months for the supplies to get here. Neither of us has a clue about what might be sent.

Looking out on the colonists around him, he notices that the same train of thought is chugging through everyone else's head. Some of them seem to allow for cautious hope, but most of them are not *nearly* as excited as Desmond was expecting. Perhaps there is a possibility—a slim and insignificant possibility—that someone down on Earth can actually help them.

But it seems to me that all of them are starting to realize it's far more likely that this response is from someone who happens to be curious, no more capable of helping them than they currently are of helping themselves.

There is a cautious, pregnant silence.

Andrew looks over to Anikka out of the corner of his eye. She's looking straight ahead, as if no one had said anything at all.

"Wait, wait," Fionna says, her voice sounding pinched and uncomfortably loud. "You're saying that suddenly, after all this time, for no reason at all... the company just contacted us? Out of the blue? This sounds fishy."

"I admit, I was skeptical too," Desmond says, his good-natured smile barely a fraction of how large it was when he first threw out the news; I almost feel bad for him. "But the woman on the other end—she said that we'd reached out first, that they found a communication from Andrew Vancoss."

As if on cue, all of their heads turn to face Andrew, each face holding its own expression of silent judgement. Andrew's used to those looks; he doesn't even wither now. Every time he's on the console, he's doing something strange that puts him on the other end of these same silent stares. But he's being just as cautious as they are at that moment.

His actions, he realizes, are the actions of someone who's going stir-crazy. Throwing communications in every direction with hope that one of them will be picked up, executing without rhyme or reason... Now that he's actually been found out, he has nothing to say.

He finds himself looking over to Desmond for help. The tall man responds to Andrew's look of uncertainty with the most genuine expression of delight. Taking a deep breath, Andrew turns to address his peers.

"Whenever I'm at the terminal," he begins, feeling an air of hostility. Part of him considers throwing in a story about wrestling with space demons just to spice things up, maybe put a smile on those grim faces, but the rest of him is convinced that such an effort wouldn't be appreciated. Andrew looks up through the reinforced glass at a dust storm that's starting. Then he takes a deep breath and turns back to their gaunt faces. "Whenever I'm at the terminal, I send a communication to Earth. I do it all the time, without fail, just because... I don't know, nervous habit, I suppose."

The faces all nod solemnly. Andrew nods with them. "I did it last time I was at the terminal, just like I do every other time I'm there."

"So you continually drain power, knowing that our sources are barely functional, and our supplies are already overburdened, and that, most likely, no one down on Earth will ever respond?" Fionna's accusation comes out like she's spitting acid. "Do you have rubber in your skull instead of a brain?"

He looks away. Once it's put into perspective like that, he can't suppress his feelings of guilt. Desmond steps closer, clapping a large hand onto his shoulder. "Does it matter, really? What matters is that we're still here, and someone actually responded, so now we can be helped. Isn't that worthwhile?"

A low hum rumbles through the crowd, as each of them considers this. They concede it's a good idea—potential aid is better than no aid and no hope for aid at all. Yet Andrew still sees a comrade or two shooting him dirty looks. They have hopes of being able to survive, but they know the probability of actually getting help is low; some people are just being more realistic with themselves than others right now. Andrew scratches the back of his head. *'This,'* he supposes, *'is the danger in being a creature of habit.'*

Andrew lets out a harsh sigh and feels Desmond rub his shoulder.

"Don't worry about them," Desmond says. "They're just groggy and irritable from being woken up all of a sudden. They'll see the benefits in your actions in due time."

"Hmm," Andrew responds. It's a nice thought, but somehow he doubts that everyone will come around. He runs his fingers over the chassis of a decommissioned rover, one of several around here that've been scrapped for parts and wires. All that's left of this one is the outer hull, which used to protect an operational body. Even its solar panels have been scrapped and removed for the sake of the settlement.

Andrew runs a hand down his face and turns to Desmond again. The tall man is still smiling.

"At least you seem happy about all of this."

"Of course!" Desmond exclaims. "Do you know what this means?"

Andrew chuckles. “That there’s a slightly smaller chance we’re going to die in eighteen months?”

Desmond responds with a hearty laugh at the morbidity of the joke. “Yes friend, that’s certainly true! But it also means that we can start our next step!”

Andrew furrows his brow. “What ‘next step’? I mean, we could certainly continue our microbial research now but I don’t—”

“No friend! No!” Desmond waves his hands through the air, as if he were swatting at a bothersome fly a few inches from his nose. “The research—who still cares about that? This Hell—I’ll go mad if I have to stay here another second longer, and I know there are others who feel the same!”

The tall man leans down to look Andrew in the eye, and cold dread curls up in his stomach.

“You have done well, contacting the company, helping with the Simulation,” Desmond comments. “Your attitude is to your credit. But the days for experiments are over. It’s time for us to go back home.”

“What? Des. We *can’t* ‘go back’; that’s the whole point of a ‘one-way trip’. This—” Andrew flails at the area around them, steel and carefully engineered lights and layers of glass enriched by alloys to make them vacuum-sealed and resist life-threatening breaks. “This is where we live now. This is—”

“Don’t!” the tall man says, his jovial nature deflating in an instant. His voice becomes low and coarse like a growl. “Don’t. This place. It’s not home.” Desmond points up through the glass dome into the red sky. “There—There is home.”

Andrew stares at Desmond. Old memories—dry Arizona summer scorching the earth and bleaching the tattered flag of stars and stripes, one of the last of its kind—stir in his head like a file being recovered.

“You may have nothing there now, my friend, but I left behind much for this venture. My little boy, on that planet—I wanted him to be proud. ‘Desmond Hall, first man to discover Martian pharmaceuticals’. Wouldn’t that make me a hero? Wouldn’t my little boy love that?”

Andrew’s mouth is dry. Even as his words come, so do thoughts of streets filled with cars, moving past in smooth silence. “Maybe you shouldn’t have come if you had unfinished business back on Earth.”

Auntie walks in with armfuls of boxes.

“Something good, Andy,” she says. “Potatoes!”

“Unfinished business!” Desmond exclaims, stepping away with eyes wide. “What a way to talk about my little boy! What rude ideas! Are you not human? Didn’t you come for fame and glory?”

“Are we gonna mash ‘em?” she asks playfully.

“Nope!” Andrew responds. He remembers the counters being so high, like the buildings.

“Are we gonna fry ‘em?”

“Uh-uh!”

“What are we going to make?”

“Potato Salad!”

“No,” he says quickly, too quickly. His whole body is a spring coiled tight, ready to lash out. The earthy smell of chilled potatoes fills his nose. “I came for science.”

. . . .

Sitting in front of the controls, Andrew, for once, is paying minimal attention to the system’s bleeps and bloops—regular alert sounds, as far as I can tell. At that moment, the settlement is in the middle of receiving transmissions from Earth for the first time in years. Anikka is over his shoulder, listening in to the conversation between Andrew and a young woman on the other end. I believe this one’s name is Athie, and she claims her mother used to be a part of the company that sent everyone up here. Sadly, Andrew seems unable to put a face to the name—Mollie or something—that she keeps mentioning, though from her stories he believes her mother sounds like a wonderful lady.

His lips quiver, as he thinks about talking to someone over a nice steaming cup of coffee, rather than sinking into a simulation to keep real resources lasting them just a little while longer.

Thinking about it, he remembers the Simulation can’t reduce their needs to zero, and their water and food supplies aren’t infinite. Kirkpatrick theorizes that they have another two years, ‘and that’s with generous, hopeful figures,’ the man has said.

Andrew grits his teeth—he didn’t come up here to die.

Well, in a weird way, he did—but he didn’t come up here for a lack of adequate water to be the reason he kicked the bucket.

“We need materials,” he says, forcing his voice to stay even, as Anikka presses her chin uncomfortably into his shoulder. “Food. Essentials like that.”

There is a brief silence on her end, but Andrew can still hear the discomfoting whistle of space around their communication¹¹⁷.

“Like, water?”

He shakes his head. “We have the machinery to extract it up here¹¹⁸—repurposed as a sub-generator—but—”

“You repurposed your water source as a *sub-generator*?” The incredulous tone in her voice makes him want to laugh. He wishes he could see her face right now, the way she said the system at KSC has the capability to see his; he’d bet his beard it’s absolutely priceless.

“We repurposed a *broken one*. And we can put it back into commission once we have the resources.” Andrew looks to Anikka for confirmation that she would be able to undo their frantic

¹¹⁷ (NASA Jet Propulsion Laboratory 2013)

¹¹⁸ (Lewis and Writer 2013)

hodgepodge of low-grade radiation and wires that keeps their slowly dying water infrastructure afloat as it can. One Tourmaline and a purifier aren't going to keep all of them alive forever. Especially not with chloride salts damaging everything and causing issues with functionality¹¹⁹. "Tools. We need tools. Wires, nuts and bolts. Do you have nitroglycerin on hand? We've been here a while, and some of us are getting up there in years. We could use first aid kits and the like—we're scientists, not always the most elegant."

There is quiet, as the message is sent off into space. A few moments later, the transmission opens from the other side. "I'm not quite sure how we're going to get all of that..."

Andrew's heart sinks.

"But I know we'll figure something out—the last thing any of us want is for you to..." She trails off.

Andrew knows what she means.

After all, he and the rest of his comrades had attempted to make peace with the inevitability of their deaths long ago.

He pushes his face into his hands and thinks.

¹¹⁹ (Akiner, Cooker and French 1992)

[EARTH;; Deadline]

Ben scraps the list in his mind and starts over again.

Water—Mollie insists that Andrew had implied a need for water—1 kilogram per liter times 3.7 liters¹²⁰ per person per day times 90 people times 28 days, because 4 weeks should be enough time for them to re-purpose their water source—9324 kilograms.

Not a feasible payload.

Because a First Mars Gold Eagle—3 stage reusable launch vehicle, most powerful type of rocket that can be fueled with propellants on hand at KSC right now—can deliver up to 2410 kilograms to geosynchronous transfer orbit¹²¹, or, to be safe, about 2200 kilograms to Mars.

Perhaps their space vehicle can cold-plate capture water from a few c-type asteroids in Aten or Apollo or Amor^{122,123,124} on its way to Mars... So it needs additional sensors and software to detect asteroids, more precise attitude and articulation controls to approach them, a cold-plate capture device, and a water storage vessel—no more than 15 kilograms.

Solved.

At least for now, because this device is something they are going to have to make from scratch—design from bottom to top—and thus test and modify and retest and remodify until they can be sure that it is going to survive ascent and deploy right during cruise.

Food—Andrew had explicitly asked for food—plant seeds, for their future, because they have greenhouse units out on Mars (plus Mollie had hit some type of garden-grower jackpot during her shopping spree in Georgia), but, according to Andrew, they had been forced to cut power to ‘most of them’, so a lot of otherwise prolific crops might not be alive anymore. Now they can have another chance to cultivate and harvest and eat some combination of tuberous roots, leaves, fruits-called-vegetables, berries, oats, barley grass, and nuts—2.4 grams per seed pack times 6 seed packs per type times 22 types, plus 50 grams or so of ready-to-plant nuts—366.8 grams.

Simple addition to any payload.

Food for right now—ready to be eaten upon arrival—1.3 kilograms per person per day¹²⁵ (in accordance with First Mars cruise-time standards) times 90 people times 42 days, because fast-growing vegetables are mature enough to eat in 6 weeks or less—4914 kilograms.

Not a feasible payload.

¹²⁰ (Panel on Dietary Reference Intakes for Electrolytes and Water, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes, Food and Nutrition Board 2004)

¹²¹ (Doody and Stephan, Chapter 14. Launch Phase 2015)

¹²² (Grip, et al. 2015)

¹²³ (Tethers Unlimited, Inc. 2015)

¹²⁴ (Planetary Resources 2016)

¹²⁵ (Dismukes 2002)

Nellie-Food—powder comprised of dehydrated plant and animal matter that gets mixed up with water and shaped into bars or chips or strings inside of a spitter^{126,127}, close to 2000 Calories of semi-solid nutrition in a full ration... which is something he has never been allowed to have. Nellie limits all of them, including herself, to as little as $\frac{3}{4}$ of a full ration per day, because she knows her current supply of spit can only last 6 people, plus 1 St. Bernard, for so long. Mollie, however, insists on sending full rations to Mars. Ben shakes his head, neither agreeing nor disagreeing with her. Then he moves on with his calculations.

2 spitters (redundancies are required in space vehicles just in case something goes wrong) times 1 kilogram per spitter¹²⁸, plus 500 grams of spit powder per person per day times 90 people times 42 days—1892 kilograms.

Better... But food for right now cannot comprise 86 percent of their payload, because structures and electronics and other equipment required for travel in space have not even been included in his calculations yet. Plus, those people out on Mars need a lot more than 6 weeks of Nellie-Food to get them through to the next century.

They can have radishes, lettuce, and spinach to eat in 4 weeks... Not enough Calories there to even supplement their Nellie-Food, let alone sustain them for 2 more weeks!

Ben wonders how much they already have available to them. Perhaps they can come up with 400 Calories per person per day for 10 whole weeks after payload acquisition, and perhaps they can make do with only 1400 Calories of Nellie-Food per person per day on top of that, at least until those 6-weeks-to-grow vegetables are ready to eat. Ben bites his lip, figuring Mollie will not be too pleased with his decision to reduce their rations. But those people on Mars need much more than a temporary source of food to keep them alive, and he needs the numbers to guarantee a successful launch—350 grams of spit powder per person per day times 90 people times 42 days—1323 kilograms.

Down to 60.1 percent of their payload now.

Solved.

Tools—Andrew had also asked for tools... Too open ended for he and the others to even bother with finished tools. Plus, spitters are easier to send. Ben thinks back on all of those odds and ends in their Nellie-Car, as he determines which types to include in their payload—2 for metals^{129, 130, 131, 132} and microlattices¹³³ (assuming Nellie can reproduce 2 functional melt-and-etch lasers with what she has on hand) times 4.5 kilograms each, plus 2 for carbon composites times 2.5 kilograms each, plus 2 for plastics times 1 kilogram each—16 kilograms.

¹²⁶ (Prisco 2014)

¹²⁷ (Natural Machines 2016)

¹²⁸ (M3D LLC 2016)

¹²⁹ (McMahan 2015)

¹³⁰ (Landau and Eller 2014)

¹³¹ (Aurora Labs 3D 2016)

¹³² (GPI Prototype & Manufacturing Services, Inc 2016)

¹³³ (Buck, McMahan and Newton 2015)

Now for spit^{134, 135, 136} (assuming they can acquire enough of these particular materials): stainless steel powders—10 kilograms per type times 3 types—tooling steel powder—10 kilograms—cobalt chrome powder—10 kilograms—copper—30 kilograms—aluminum and aluminum alloy powders—30 kilograms per type times 4 types—nickel alloy powders—10 kilograms per type times 2 types—titanium alloy powders—40 kilograms per type times 3 types—spools of composite fiber tape—5 kilograms per spool times 32 spools—liquid photopolymers—up to 1.18 kilograms per liter times 50 liters—559 kilograms total.

Plus graphene, for everything else—40 kilograms.

Brings their total payload weight up to 1953.3668 kilograms so far, which is still feasible for a Gold Eagle.

Solved.

Nitroglycerin—Andrew had also wanted nitroglycerin—vasodilator drug for chest pain... Ben shudders.

Perhaps 1 gram per tablet times 100 tablets per person times 90 people, plus 4 grams per bottle of 200 tablets—9.18 kilograms.

Bye-bye blood kits—Andrew had mentioned that he and his fellow scientists were in dire need of bye-bye blood kits. Ben estimates enough bandages and antiseptics and stuff to tend to... a lot... of wounds per person times 90 people—up to 50 kilograms¹³⁷.

Makes their total payload weight 2012.5468 kilograms.

187.4532 kilograms left for internal and external structure, power sources, sensors, control computers, communications equipment, insulation¹³⁸... structures and subsystems that matter most for successful navigation through space.

Almost feasible.

He might have to let them use up more than 2200 kilograms of Gold Eagle payload. He hates this idea of pushing their luck and their limits, but he supposes it should not be *impossible* to make everything work out right.

All of sudden, Ben remembers the utmost important part of this whole operation—something he has neglected to consider until now—the Deadline.

Launches to Mars need to be made during a very specific moment in solar system time in order to achieve the shortest possible cruise-time and maintain the most favorable probability of success. Mars is closest to Earth at its perihelion—point of orbit closest to the Sun—and a

¹³⁴ Ibid

¹³⁵ (Jakus, et al. 2015)

¹³⁶ (Metalysis 2013)

¹³⁷ (Mayday Industries & EmergencyKits.com 2016)

¹³⁸ (Doody and Stephan, Chapter 11. Typical Onboard Systems 2015)

Hohmann transfer orbit designed to get a space vehicle from Earth to Mars as fast as possible, of course, has to take advantage of such proximity^{139, 140, 141, 142}.

Ben glances up at the star-studded black sky and trains his eyes on Mars. Then he remembers something special on his orbit calendar (his favorite Casper application), and he feels a funny lurch in his stomach:

June.

Their launch has to happen in June, because a Perihelic Opposition is going to happen in August, and Mars is going to be closer to Earth on August 15 of 2050 than it has been since August 27 of 2003^{143, 144, 145, 146}, and no one on Earth or Mars can do anything to change that.

Perihelic Opposition: Mars and the Sun ending up on exact opposite sides of Earth, Mars and Earth getting to be less than 37 million miles apart—event that occurs once every 15.8 years and just happens to offer close to ideal conditions for a voyage into space.

Which is why NASA launched 2 rovers to Mars just before the Great Perihelic Opposition of 2003—Spirit on June 10 and Opportunity on July 7. Both were landed at their respective destinations in under 8 months^{147, 148}.

Also why ESA and Roscosmos launched their second ExoMars mission¹⁴⁹ just before that July Perihelic Opposition of 2018—Surface Platform, a stand-still geophysical investigation device, and Rover, a first-of-its-kind drilling and driving machine. Their rocket went up and May 22, and their mission control on Earth acquired images of its landing site 54 hours before the start of the New Year.

And why First Mars launched 3 loaded GPSMs—Genesis Program Support Missions—just before that September Perihelic Opposition of 2035—Adam on July 1, Eve on July 2, and Eden on July 14. First Mars received Thank-You Carol No. 3 of 3 from their settlers on Christmas morning.

Ben makes up his mind right then and there: Their launch has to happen after June 15 and before June 25. Using old-fashioned solar sails and supposed-to-be-next-generation ion engines¹⁵⁰ to propel their space vehicle, he figures their payload can get to Mars in under 5 months. He supposes they should also attempt to coordinate a second launch for all of those unfinished prototypes and unopened shipping containers stored here in preparation for Genesis XIV in 2046, because a launch window is a launch window, and a launch pad at KSC is too valuable to abandon

¹³⁹ (Stern 2004)

¹⁴⁰ (Widnall and Péraire 2009)

¹⁴¹ (thChieh 2011)

¹⁴² (Braeunig 2013)

¹⁴³ (thChieh 2011)

¹⁴⁴ (Beish, *The Opposition Cycle of Mars* 2002)

¹⁴⁵ (Beish, *The 2018 Perihelic Apparition of Mars* 2016)

¹⁴⁶ (McCurdy 2003)

¹⁴⁷ (National Aeronautics and Space Administration 2003)

¹⁴⁸ (National Aeronautics and Space Administration 2015)

¹⁴⁹ (European Space Agency 2015)

¹⁵⁰ (Doody and Stephan, *Chapter 11. Typical Onboard Systems* 2015)

after 1 launch at a time like this. Plus, those people on Mars could use to receive as much as Earth has to offer.

Ben blinks his eyes and, all of a sudden, he remembers the date—May 6.

7 weeks.

Even Genesis XIII, First Mars's final manned mission before the Collapse, was conceived before 2030, built up on campuses in six different states of America over a course of about 10 months in 2043, boxed up, and shipped off to KSC in time for a whole 3 months of ATLO^{151, 152}—assembly, test, and launch operations—before its series of launches in 2044.

Ben feels his heart begin to race, as his lungs begin to gasp, and his head begins to spin. He shoves a shaking hand into his right pocket and pulls out his Rubik's Cube.

Solved... Solved... Solved...

They cannot launch without ATLO.

Solved... Solved...

But first they have to create an operational cold-plate capture device from scratch...

Solved...

And scavenge for foodstuffs and metals and carbon composites and plastics and graphene...

Solved...

And build new spitters...

Solved...

And salvage a space vehicle and a rocket, then test both until they feel sure that everything is going to work out right on launch day...

Ben shuts his eyes, cradles his Rubik's Cube against his chest, and curls up into a rocking ball on the damp grass.

Too much to do in not enough time.

¹⁵¹ (Doody and Stephan, Chapter 7. Mission Inception Overview 2015)

¹⁵² (Doody and Stephan, Chapter 14. Launch Phase 2015)

[Mars;; 6]

SUBJECT = Anikka [Unknown Last Name]; ID = AN40323;

Anikka kneels there, deep in thought, performing regular maintenance on Tourmalines T4789.

Floor Panel F1182 in Sector LAB7 needs to be repaired.

'We will be fine,' Anikka thinks. *'Everything will be fine.'* She has no doubts in her mind that somehow, some way, everything will work out for the humans.

'There's no point in doing anything if you can't do it filled with hope,' her mother would tell her, as she sewed in their tiny home. Anikka remembers the way the sewing machine, an old thing from 2010, more silver duct tape than actual sewing machine, sounded in their apartment. She remembers the soft wood texture of her mother's worktable, the way her chair creaked every time she so much as moved to stretch her neck or crack her back.

Anikka remembers everything about home with stark clarity. She has gone over memories of it so many times now that they come to her instantly, plunging her so deep into a moment of her past that it clogs all of her senses.

Pipes P5598-62 through P5598-79 in Sector LQ85 need to be unclogged.

Anikka's mind wanders through her home, hands running over old wood paneling, toes catching in the carpet filled with holes...

It is small, even by the standards of the apartments in the incredibly crowded city¹⁵³, and so high off the ground that she gets painfully dizzy whenever she dares to look out of the window. The creaking floor is barely big enough for her to lie down on¹⁵⁴, but she does so anyway, her head right up against the wall. Then she closes her eyes and listens.

Through the walls she often hears noises—crashes, thumps, creaks, and drug deals—but she still is thankful. Right now, the sound of someone playing music in the next apartment is her only entertainment, even as her mother ushers her away from the wall as the music descends into several swears and what sounds like a woman screaming.

"Always be thankful," her mother tells her, as she pulls back threadbare curtains and unveils the shadows of buildings through smoke and fog like slender giants. "Be thankful."

Anikka's home is old. Everything in it is at least as old as her mother. So much of it is broken or barely functional. The TV is not quite able to read the more advanced signals designed

¹⁵³ (United Nations 2014)

¹⁵⁴ (Grozdanic 2014)

specifically for the Vizor¹⁵⁵, so it usually blinks between what looks like a strange propaganda program and some other program designed to be viewed in 3D.

Anikka takes a step towards it and reaches out to change the channel. A loud clang echoes all around her—

The image of her apartment pops like a fragile bubble.

The area around her is dark.

LED62352-4178 through LED62352-4201 in Sector GU4 need to be replaced.

She reaches out a hand.

'Where the hell?' Anikka thinks.

She tries to remember the route she took to get here. She is unable to recall anything about where she has gone or how she got here.

'Not again...'

Her hand plunges into her utility belt, unable to see what she is reaching for, but not groping blindly. She knows what is in her belt and where each item is located. The screen she pulls out bathes the area in soft blue light, illuminating robotic corpses and hollow chasses that have been scoured for parts and wires needed to fix other things.

41AV63900: ANIKKA PLEASE RESPOND.

41AV63900: ILIAD IS DAMAGED.

41AV63900: IT IS COMPLETELY UNRESPONSIVE.

41AV63900: PLEASE RETURN TO LAB 5.

41AV63900: ASAP.

Anikka looks down at the display and then looks around at the metallic corpses. She runs her hand over one of them, a rover that used to bring back different mineral samples; it has been up here longer than all of them. Her heart begins to sink. She takes a deep breath and puffs out her chest.

As her mother has told her time and time again: Always have hope.

ILIAD hopes to be repaired.

While Anikka walks, she contemplates what might have happened to me, what she can do to fix whatever it is that broke. It is unlikely, in her mind, that I have fallen victim to the Martian climate, because I am not an 'outside' robot; I am designed to do intensive repairs inside of the living quarters.

Hydration Indicator LED on Panel VR003 needs to be replaced.

¹⁵⁵ (Metz 2014)

What is more likely, Anikka figures, is that something in me has become worn down enough to short circuit. She decides to not blame me for breaking—I have been up here for 5 years, after all. Even the most impressive technology starts to slow down after a few years of almost-constant use¹⁵⁶.

She examines more of the metallic corpses, turning them over to peek inside and see if there is anything she can use, any wires that were overlooked when other humans first took them apart.

'I'm not going to find anything,' she thinks, dropping the hull in her hands with a loud bang before lifting up another one. 'We picked these guys clean ages ago.'

That one, too, she allows to hit the ground before placing her hand on the wall casing of Panel W5567. She immediately dismisses her idea.

Taking parts from the structure that keeps everyone alive for the sake of one robot... How preposterous.

I would not mind it if she did.

Knowing there is nothing here that she will be able to use does not stop her from continuing to scavenge. The idea of me dying makes the meagre ration of food in her stomach turn sour and bitter.

Her thoughts begin to run...

"Don't be silly," Fionna says. Her voice is sweet and soft, yet it seems to waver and wobble. "Robots can't die. They aren't alive."

Anikka gestures down the hall, where the sound of my repairs has been filling the fragile silence. 'Iliad is alive.'

It takes Fionna a second to process her meaning. Then the woman laughs, turning back to the terminal and typing something. Anikka must already know that Andrew will complain about what Fionna has done when he takes over in a few hours and undoes it, then redoes it in a way that is 'better'.

It is funny, how they work together sometimes, how Andrew refines Fionna's ideas.

"Iliad isn't alive." Fionna continues, scrunching her face in a peculiar way that quadruples her wrinkles. "It's a robot. It only does what it's programmed to do."

Anikka shakes her head and makes a motion that looks like fanning herself. 'She thinks. She learns'¹⁵⁷.

Unfortunately, Fionna seems to not get her meaning. "Computers fan themselves when they get hot, but you wouldn't say that computer is alive."

Anikka puts her hand over her heart and makes the motion of patting her chest. 'She feels. She has emotions.'

That, it turns out had been the wrong thing to say.

¹⁵⁶ (Howell 2015)

¹⁵⁷ (Macdonals 2015)

Fionna's mouth becomes a line then, and she turns to the terminal, saying nothing to Anikka for the rest of her shift.

“Anikka!”

Andrew's voice snaps her out of her thoughts this time. Her feet have carried her to the lab, and on the table before them is me.

A grisly mirage of a caved in head, black blood, and wires sticking out every which way, sparking wildly, is what she imagined she would see. She thought there would be a mess, and I would be beyond repair.

But I am sitting in the middle of the metallic tabletop, my normally softly whirring body now silent. When she rests her hand on me, my metal is cold to the touch. It usually feels warm to her, almost human.

Anikka, more so than any other human on Mars, believes that I am alive. But, looking at me like this...

'She's sleeping.'

“I ran a diagnostic on it,” Andrew says. “It didn't seem like there was anything wrong with its software. It must be a hardware issue.”

Keyplane K0912 in Sector TER0144 needs to be repaired.

Anikka leans down and unscrews my anterior exterior plate. She looks at my innards and thinks I am beautiful beyond measure. *'If only Fionna could see this,'* she thinks. *'If she could see this complex beauty, surely she couldn't say Iliad isn't alive.'* She finds herself looking over every plane, every board, every wire, labeling them all like organs.

Heart. Stomach. Liver. Brain.

Looking more closely, it is clear to her that something is wrong.

I suppose it looks like someone else has opened me up and tinkered around since my last normal maintenance and has taken no care in putting me back together properly. Most casings for my more delicate parts have been left open, and wires are spilling out.

“Is something wrong?” Andrew asks, looking over her shoulder. Andrew is smart, but the intricacies of machinery are not his forte; Anikka knows this.

She notices one casing that is still closed, the one she labeled as my brain.

This makes her suspicious enough to unscrew the box.

“What's that?” Andrew asks.

Anikka pats her head in response.

“...the brain?”

She nods.

Then she removes the screw and opens the casing.

Inside is my brain. She thinks it is lovely and brilliant and wonderful in every way, but she resists the urge to touch anything.

Almost immediately, she notices something missing.

She gives Andrew a tap and points to a space between what looks like two slabs of metal, each containing some facet of what makes me myself.

“What is it?” Andrew leans in. “...Is something supposed to be there?”

Anikka nods.

“Someone had to have removed it then...”

Anikka carefully fixes the inside of me, putting the wires back in place as best as she can, rummaging around in her utility belt for screws that might fit my body.

“What did they take out?”

She closes me and stands up. No matter how she tries, she cannot think of a proper gesture to describe such a nebulous concept.

Anikka grabs his hand and turns it palm up. His skin is smooth, except the heel of his palm and the pads of his fingers... He has the hands of a violinist.

Slowly, she begins to trace the shapes of letters on his palm.

“P-E-R-S-O-N-A-L-I-T-Y. Personality?”

She nods.

“Why would someone remove something like that?”

She shrugs.

“Can it work without it?”

That takes her a moment. We both know I can function without a personality, but...

Anikka nods hesitantly.

“Work on getting it back online,” Andrew says, placing a hand on her shoulder. “We’ll figure out who took her personality later.”

Anikka stares at me, as I lie unmoving on the table. She thinks I look sad... I wish I were able to agree.

[EARTH;; Another One from Andrew]

Athie gapes at Will—at least she hopes she is gaping at Will—and tears her wrist out of his grasp again, a smallish squeak escaping from her lips.

“Not like you can do anything else right now,” Will charges on, ignoring her response to his comment.

Athie wishes she could see his face. *‘He could use a good slap for this!’*

“Not like he has anything better to do with his time, either,” Will adds, snatching her arm up in a death-grip and dragging her on. “Just keep him updated on our progress, and keep us updated on his requests.”

Athie digs her heels into the dirt and shakes him off. “No!” she shrieks. “I want to help!”

She imagines him glaring at her—just glaring at her—for a moment, like a father at a temperamental five-year-old.

“You can’t help,” he states—matter-of-fact—not a challenge... just a plain and simple truth.

Athie narrows her eyes and balls up her fists. “Yes. I. Can.”

“Keep dreaming, Athie,” he shoots back, his voice smirking more than loud enough to make up for his lack of a visible face. “As long as your eyes are as good as closed, *that* is all Mollie and Ben and I expect you to—”

Athie rips her beam-gun out of its holster and hurls it towards his voice.

Clap—clean catch.

“*That*,” Will continues, “and communicating between us and Andrew.”

Athie feels hot tears welling up. *‘He could use a shake-and-strangle for this one!’*

For a moment there, she imagines locking his neck between her palms and digging her fingernails into his skin until every blood vessel in his mocking blue eyes has burst open, and his pulse has thumped to an irrevocable halt. Then she pictures Will curled up at her feet, pale and cold and still, his lifeless blue eyes staring up at her, apologizing, begging for mercy, accusing, reminding her of something... a lot of things...

She places her hands around her own throat and swallows; she could never do that to him. Then she feels her pulse and breathing slow, and her flesh begins to cool.

“Sorry,” she mumbles, hanging her head. “I didn’t mean to...”

All of a sudden, Will is back at her side, his arms and chest radiating enough heat to make her sweat again. *‘And that breeze was just starting to cool me off,’* she thinks, pouting at nothingness.

Athie takes a half-step back and offers her wrists.

“Going up?” Will inquires, pressing his right forearm into her left forearm and gripping her hand.

Athie nods. “Going up.”

Will leads her into LCC—Launch Control Center¹⁵⁸—what is left of it—and up to floor three, where all four Firing Rooms have been struggling to support the weight of a caving fourth floor and a collapsed roof since KSC was attacked in 2045. At this point, Firing Room 1 and Firing Room 2 are too filled up with rubble for their computer terminals to function, or even be accessed, for that matter. Lucky for her, First Mars bought up a corner in Firing Room 3 to manage their launch operations and maintain contact with their settlement during an actual launch (since manual attitude and articulation adjustments to each of their space vehicles were expected to be made by someone on Mars after its payload fairing and its third-stage booster jettisoned¹⁵⁹).

Worst thing about Firing Room 3, in her opinion, is that giant window. According to Will, it allows enough light in to keep the furthest corners of the room free from shadow until dusk, and it provides Athie with a front-row seat to watching everyone else work on the launch pads.

Great.

Except that she cannot see, so, of course, she just sits on her butt, waiting for Andrew to finish up his Simulation Shift, return to consciousness, consume his water and food rations, and wander back to his terminal. Sometimes she waits for forty-five minutes, sometimes for fifty-six hours (she now knows that his Simulation Shift lasts up to one-hundred twenty hours, and that he receives one water ration injection after each twenty-four-hour period, except, of course, for the one that ends when he wakes up).

She has taken to counting—like Ben—just to keep her mind busy, now that she has memorized the entire layout of Firing Room 3. So she knows how much time she has been spending alone since Ben declared a deadline. She knows how much work she could have been doing; in other words, she knows how much time she has lost them thus far.

And she is beginning to hate herself for it.

“Later, Athie,” Will utters, abandoning her in Firing Room 3—*again*—with her left hand resting on an angled metal pole in the center of its two-door entrance.

“Later, Gator,” she mumbles back. ‘*Not that he can hear me now.*’

She knows she is alone—*again*. She listens to LCC for a moment. Her ears pick up a soft hum of old-fashioned digital computers, nothing else.

“No missed messages from Mars,” she sighs, reaching her right hand out towards a railing two steps forward and one step right, between herself and a five-step staircase up to that window. Then she wanders into the room and begins to count.

“Um... Athie?”

She jumps, whirling towards that voice between the two-door entrance, losing tack of her count at four thousand four. “Gosh!”

“I—”

“Nellie?” she gasps.

“Yep.”

¹⁵⁸ (National Aeronautics and Space Administration 2015)

¹⁵⁹ (National Aeronautics and Space Administration 2014)

“Um... Hi,” Athie begins, unsure of how to perceive Nellie’s presence in Firing Room 3; never has she ever bothered to visit Athie up here before. “Is everything okay out there?”

“Yep,” Nellie replies, her tone curt and quiet, there but not there. “I just... I have a question for you... about Will...”

Athie furrows her brow. “Okay...”

Nellie is silent for a bit, and Athie wonders what she might be thinking about.

Then she hears a sharp inhale.

“Is he... violent?”

“Will?” Athie exclaims. “No—not at all! His words are violent, but even when he gets really pissed off about something all he does is ball up his fists and shout until he runs out of things to flip off—all bark and no bite.”

“Sort of like his dog?” Nellie replies.

“Yes,” Athie chuckles. “Just like Bess! Nothing to be afraid of.”

Nellie is quiet again. “You sure?”

Athie feels her smiles droop a little. “Yes...”

“You positive?”

Athie bites her lip. “Nellie—”

“Because I used to know... someone... a lot like Will,” Nellie mumbles, more to herself than to Athie, “and words alone were never quite enough for him.”

Athie feels something crack within her; Mollie always used to tell her that other little girls out there had it a lot worse than she did... “Nellie—”

“I still don’t trust him,” Nellie mutters.

Athie nods. “I don’t think he trusts you, either, but I know he’d never hurt you because of it.”

Nellie is silent for a moment. “Um...” she continues, and Athie hears a quiet sniff. “Just... Let Ben and Mollie know when you hear back from Andrew.”

Athie nods again, as Nellie’s footsteps fade.

‘No wonder she always has at least six guns on her.’

She shakes her head, forcing her darker thoughts back into the depths of her mind. Then she restarts her count from zero.

Beep-beep.

She stops at six thousand seven hundred sixty-two, scrambling over to her terminal as fast as her legs can manage to maneuver across the room.

“Athie speaking,” she blurts, skidding to a halt above her transmitter and jamming her finger into the uplink switch. “Again.”

She flips the uplink switch off and presses the downlink switch on¹⁶⁰, because her terminal just barely has enough power to support one-way communications, and a two-way mishap would shut her down and cut Mars off from Earth again—not something that she wants to risk.

“Hey, Athie.”

Instantaneous, because First Mars set up a QuComm system in LCC, and Mars is close to Earth right now, which makes it super easy to hold a conversation.

She presses the downlink switch off again and flips the uplink switch back on.

“Hey. So, we’re on schedule—at least Ben thinks we are. We’re still planning to launch two vehicles during our window, one with everything that you requested, one with everything that made it to KSC back in 2045 and should have been launched as part of Genesis XIV in 2046. We made an effort to fix up two whole launch complexes instead of just one, and we also managed to dig up three Gold Eagles all in pretty decent shape, one to test, two to launch. Those still need to be fixed up... a lot...”

Flip.

Athie pauses, running through Ben’s checklist again and again and again until her thoughts are organized—press—and her receiver is crackling with his voice again.

She wishes she could see him on that monitor...

She hears Will laugh.

“So this is Andrew Vancoss?” he asks, hovering over Athie, scrolling through recorded footage of their first ever full conversation, snorting at one thing then chuckling at another.

“Must you mock him?” Mollie chides.

Athie imagines her folding her arms across her chest.

“Oh, please,” Will exclaims. “He’s a hundred fifty-something million miles—”

“Not—” Ben interjects.

“He doesn’t give a fuck about—”

“Mars is closer to thirty-four point eight million miles¹⁶¹ from—”

“And I don’t give a fuck about what he thinks of me!” Will declares.

Mollie clears her throat. Athie imagines stern silver eyes and pursed pink lips, a sort of disapproval in her demeanor—more because of his word than because of his point.

“Is something wrong with him?” Athie inquires.

Will snorts again. “No.”

“Then what are you laughing at?”

Will just keeps laughing, and Athie huffs.

“Please... Just... Tell me what he looks like.”

There is a brief pause.

“Astro Bear,” Ben offers, and Will busts up laughing again.

¹⁶⁰ (Doody and Stephan, Chapter 10. Telecommunications 2015)

¹⁶¹ (J. D. Beish, The Opposition Cycle of Mars 2010)

“An ordinary man in an extraordinary situation,” Mollie utters through clenched teeth, “under a great deal of stress and with a noticeable lack of access to certain... amenities...”

“Like us?” Athie replies.

“Sure,” Will chortles, “but hairier!”

Athie furrows her brow.

Then Will snaps into a silent sort of seriousness. “Unless you find that attractive.”

“Athie?”

Athie shakes her head, dropping herself back into the present.

“Have you gotten *anything* yet?”

‘That question.’

Athie takes a deep breath.

Press.

She exhales—long and slow—reminding herself to be cautious with her words; the last person in this universe she would dare to disappoint is Andrew.

Flip.

“Apart from a few CAD drawings of a water collection device to deploy during cruise?” she begins, her voice shaky and shallow. Then she pauses. “No.”

Flip. Press.

Silence.

Athie grits her teeth.

Press. Flip.

“We... don’t quite know how we’re going to... acquire... certain things... I mean, there’s a lot going on here right now—a lot a lot—and... I... we... First off, we need all hands on deck just to get these rockets in shape for launch, and, second off, trips back over to the mainland aren’t safe enough for us to make, with all those Sembradores congregating in Orlando right now...” She bites her lip; Andrew has no idea. “Other people are... dying... because of them... I know there aren’t a lot of you out there, but, in this day and age, coming up with resources for ninety people is...”

Flip.

‘Impossible.’

Athie refuses to say it.

Press.

“Hard to do without attracting some notice,” he finishes.

Athie nods—she wonders whether or not he can see her. He is silent for a long time.

“Hey, Athie. D’you have a printer down there?”

Press.

Athie furrows her brow. *‘...a what?’*

Flip.

“A... *printer?*” she inquires.

Flip. Press.

“Yeah, you know, a—you give it a... digital 3D object—one of those CAD drawings—and it makes it real using additive—”

Press.

Athie almost laughs. *‘How old is this guy?’*

Flip.

“Oh,” she replies. “You mean a spitter.”

Flip. Press.

“Yeah. A spitter.”

Press. Flip.

“Yes. Nellie has a few for herself—she spits up all sorts of guns with them—and she’s just started to build one of six that we’re going to send to you—so you can spit up whatever tools you need whenever you need them,” Athie explains, “and I think there are a few more in VAB—Vehicle Assembly Building—that are almost usable... What do you want us to have one for?”

Flip. Press.

“Okay, good.”

Tapping—from his end.

“What if...” he starts again. “If we could gather the materials for you?”

Athie blinks; she has to hear the rest of this.

“The point is,” he continues, “that it should be possible for us to interact with stuff down there and collect materials if we had a good... avatar.”

Press.

‘Avatar.’

Flip.

“You want us to spit up... *bodies?*” she replies, making a face.

She hears a rumble—thunder. “Air outside has been hot and thick and humming with storm all morning,” she mutters to herself. “About time it showed up.”

Then Athie bites her lip, wondering what kind of...

Then it hits her—*bodies*.

Those robots: Ben and Nellie and Will and Jack keep talking about them—R-class descendants of Valkyrie^{162,163}—humanoid, maybe even intelligent, machines—another remnant of NASA scattered across Merritt Island in heaps of twisted metal microlattice and shattered graphene and knotted wires. Some are, at least according to Will, in better shape than others... much better shape, more in need of a recharge and a good cleaning than a Frankenstein job.

‘Good thing, too,’ she muses, *‘because, as much as I love that read, I would hate to be that doctor!’*

Athie sort of smiles. Then something inside of her begins to long for Helga.

¹⁶² (Ackerman 2013)

¹⁶³ (NASA Johnson 2015)

“We might not need to do that,” she utters to Andrew, pushing her memories back into their proper places. “We can get you something better.”

Flip—

“Hey, Athie?”

Athie spins towards the entrance, one hand still hovering over the un-pressed downlink switch.

“Jack? What—?”

“We need you.”

Something inside of her begins to do cartwheels, and she smiles. Her fingers fumble around for her transmitter, and she flips the uplink switch back on.

“We’ll contact you again soon,” she rushes.

Flip.

Then she is sprinting towards Jack.

“What’s up?” she gasps, skidding to a halt a few feet in front of him.

Jack hesitates for a moment. “For starters, Bess ran off again.”

“Oh,” Athie mumbles, as her face falls. “Got it.”

He does not need to tell her that Will also happens to be erupting like a volcano over something, spewing curses hotter than lava at everything and everyone with each breath he takes. She already knows that her job is to cool him off then distract him with an island-wide search for his dog, because freak thunderstorms seem to be a Merritt Island norm, and, ever since she and Will and Mollie and Ben and Bess found a way across Indian River inside of Nellie’s JLTV, Athie has been dragged out into all of them in order to do just that.

“Another one from Andrew?” he asks, looping his arm around hers.

She grins. “He wants to help us out.”

“From Mars?”

His voice is incredulous.

Athie nods. “Best part is that we just happen to have a means for him to do it.”

She wishes she could see Jack’s face.

[Mars;; 7]

SUBJECT = Andrew Vancoss; ID = AV63900

The Earth, as Andrew has learned through his communications with the human who continues to live on it, has gone to shit, as the newer astronauts have told him. To put it lightly, the planet has been ravaged and ruined by the kinds of things science had been warning against for the better part of three decades.

Andrew rubs his face and feels nothing but beard. He is quickly growing to hate the feeling and texture of beard. Part of him wants to grab the laser Anikka keeps holstered to her and shave with it—which, he supposes, would be at least as amusing to watch on her end as it would be mind-numbingly painful on his.

“I know there aren’t a lot of you out there, but, in this day and age, coming up with resources for ninety people is...” Athie trails off again.

“Hard to do without attracting some notice,” he finishes.

He feels Anikka hit him hard on the shoulder, and he turns to give her his attention, because ignoring her is just a one-way trip to more slapping, and he is the furthest thing from being in the mood for this right now.

Anikka continues making excited motions with her arms. Her hand rubs along her shoulder and her forehead then drops to her knees before she points back towards the living quarters. Andrew squints at her frantic display and knows that she is trying to tell him something she thinks is of the utmost importance.

‘That’s what scares me the most,’ he thinks to himself, as Anikka continues to flail in front of him. *‘These motions actually have a meaning.’*

The dark skinned woman repeats the motions again, slower this time. When she gets no more than an exaggerated squint in response, she swats the man’s back with a small huff and gestures towards the screen.

Andrew remembers having Desmond mediate at one point, because he had thought her hitting meant something bad. But it has always been her way of saying, ‘I give up.’

Desmond had described it as ‘tapping out’.

Leaning far forward, Anikka points at the screen, her fingernail hovering close enough to it to worry Andrew. Its pixels show graphs jumping up and down frenetically, spitting out information about the Simulation that Andrew does not really care to think about at right now. He squints at it anyway and then turns to Anikka again. The one part of him wonders why she is so interested in the Simulation all of a sudden. The other part of him wonders how the hell she got her spastic flails from the images on the screen.

‘Although, looking at how wildly the graphs are moving...’ he considers. *‘It can’t be that much of a stretch.’*

“The.... Simulation?”

Anikka nods. Her hair bounces in a way that reminds him of a tumbleweed.

She resumes her gesturing. Her hands circle around her head, as if she were putting on a helmet.

Andrew watches this, clearly vexed, before glancing back at the terminal, at the computer waiting for him to transmit information back to Earth. The beginnings of an idea begin to form in his head. Small, fledgling, with the specifics not even born yet. All it is, is an idea. *And goddamn it, if it isn't a good idea; goddamn it, if it isn't at least worth a shot.*'

He taps the button again, and the connection reopens, as if he never closed it in the first place. "Hey, Athie. D'you have a printer down there?"

The woman sounds confused. "A printer?"

"Yeah, you know, a—you give it a... digital 3D object—one of those CAD drawings—and it makes it real using additive—"

"Oh, you mean a spitter."

Andrew is quiet and rubs the bridge of his nose. He suddenly feels forty years older. "Yeah," he says. "A spitter."

"Yes... What do you want us to have one for?"

"Okay, good," he says, tapping the terminal. It is forming in his head now; he can almost grasp at it.

"What if," he starts slowly, still groping at the fine details of his plan before he throws it to Earth for the woman to figure out. "If we could gather the materials for you?"

Andrew's memories of it are fuzzy, but he does remember that it used to be called the ISIPLAS before its name had been cut down to just 'the Simulation'. He remembers that its purpose then was to reinforce skills he and the others had learned on Earth during the long flight through space, that it used to stimulate their muscles with... *'Something about nerves¹⁶⁴?'* He remembers lying down and being told a bunch of things that, at the time, had made perfect sense but now, after being up in the settlement so long, have started to fade light blue, like the poster of Mickey Longhead his father used to keep in the living room all year round.

"The point is," he hears himself say, "that it should be possible for us to interact with stuff down there and collect materials if we had a good... avatar."

"Avatar... You want us to spit up... *bodies?*" the woman exclaims. Then she is quiet for a while. The man hears something in the background, some kind of rumbling. At first, he wants to chalk it up to space interference in their connection, but then he realizes it is too low-pitched for that. "We might not need to do that," she utters. "We can get you something better."

"What?"

"We'll contact you again soon!"

The woman ends the conversation by closing the connection between them. Even as the man tries to reconnect to her, the receiver on her end keeps denying him access.

He wants to swear, but instead he just sighs.

"We're no closer to being saved," he groans between his teeth. "We contacted Earth and they—"

¹⁶⁴ (The New York Times 2015)

Anikka peers at him like an owl from where she is standing, hands behind her back, face looking uncomfortably relaxed. *'Maybe she's just more at peace with this than I am right now,'* the man thinks. Then he shakes his head; he considers it more likely that she just knows something he does not know.

The silence fills the room, and Andrew starts thinking more about what exactly he wants to do.

“Hey.”

Anikka raises an eyebrow to acknowledge him.

“Do you think we would be able to do this? Be able to.... make contact with Earth more permanently?”

She is pensive for a few moments before she slowly starts to nod.

“Yeah, me too.”

The silence returns. It makes him nauseous.

He supposes he should talk to Kirkpatrick to see if they can really do this... “What do you think will happen then?” he asks quietly. “When we have all the things we need?”

Anikka gives him a look before she gives her worn and faded utility belt a hardy pat, like a human would a comrade it was inviting over for a drink. Then again, her utility belt is basically her best friend. The man just stares at her. He envies her ability to tackle things one at a time, to make sure all the small pieces work before trying to stand on her tiptoes and take down a herculean task.

He wishes he could be like that.

[EARTH;; Robot Called Resurrect]

Mollie stares at Athie, shaking her head; an image of that robot curled into a miserable heap at her feet is still branded on her mind... gnarled limbs and lightless eyes, helpless, dead for too long and broken in too many places to ever be repaired, hopeless.

“You told him *what?*” she presses, her tone betraying a mix of anger and utter disbelief.

Athie huffs. “I didn’t *promise* him anything; I just said, ‘We can get you something better.’”

“And you had *these* in mind!”

Athie shrinks back a little, a flicker of concern flashing across her face.

Mollie sighs, pinching the bridge of her nose between her thumb and pointer finger and closing her eyes, reminding herself that her daughter has not seen them.

“Can you fix a few of them?” Athie whispers, her voice hesitant and hopeful all at once.

Mollie lowers herself to the ground—not as easy as it used to be—and takes a closer look at that robot. Then she sighs again. “Maybe—”

“Yes!” Athie exclaims.

“No promises,” Mollie adds. “Okie? They get three days from me, and, if they work after that, then they work after that; if not, then we need a different plan for supplies.”

Athie is hopping up and down with excitement now. “Thank-you!”

Mollie folds her arms across her chest. “So come up with a backup plan before I decide to give up on these things.”

Athie nods, overeager and puppy-like, because she would do anything to please her mother now.

“And tell Nellie to spit up a few good multi-tools¹⁶⁵ for me,” Mollie continues, shuddering at another thought of that robot at her feet, “before I change my mind about these things.”

Athie nods even more vigorously. “Pliers, screw drivers, high-magnification lenses, soldering gun—”

“Whole deal,” Mollie agrees, guiding Athie towards their vehicle.

“Capacitors, too?”

Mollie grins at her daughter. “Always.”

Then Athie whistles. “Bess!”

The St. Bernard bounds over to her, ears and jowls flapping like wings, rope dangling out from between her teeth. She skids to a halt before Athie and nudges her outstretches palms. Then Athie wraps her fingers around one end of the rope, as Bess chomps down on the other end.

“To Nellie, please!” Athie exclaims, and Bess leads her on.

Mollie smiles at them—ingenious... *‘To think that William had suggested it first.’*

Not on purpose, of course; just this morning, he had decided that he was too sick and tired of dragging Athie around like a five-year-old in a sports stadium and dealing with her incessant onslaught of innocent questions (and so on and so forth) to do it anymore. Then he had gone on to point out that Bess has been doing nothing but lounging around and begging for more food...

¹⁶⁵ (Vinoy, et al. 2014)

“Why can’t she lug Athie around? She’s a damn good creature to trust with shit like this—she’s supposed to be a rescue dog!”

And, aside from William’s excessive use of a certain expletive throughout the entirety of his rant, Athie had offered no objections to the idea.

“Updates, Mollie,” Benjamin exclaims, appearing at her side. “Will and Nellie and Jack compiled a list of everything left inside of Cerebrum and VAB and Headquarters and ISS Center. Nellie found sixteen different spitters for metals and composites and even ceramics and space-food, and she thinks at least ten of those will work once we figure out how to reconnect them to computers and supply them with power; she might not have to build any now. Then Will checked out Environmental Test Lab¹⁶⁶, and he guesses the shaker table and the thermal-vacuum chamber are still connected to some type of renewable power source, because he tested both of them, and everything seems to be operational right now.”

Mollie feels a mixture of excitement and relief wash over her like a tsunami. “Wonderful!”

“They found more of Genesis XIV, too,” Ben continues. “Unopened boxes and prototypes for all types of self-sustaining systems to send to Mars.”

Mollie blinks and furrows her brow. ‘...*self-sustaining systems?*’ But her question remains unasked, because, all of a sudden, Nellie is standing before her, arms crossed over her chest, face set somewhere between a gawk and a glare.

“You got any ideas about what these robots are programmed to do?”

Mollie opens her mouth.

“Because all of them are armed with autonomous anti-aircraft guns, which means, at some point, someone was using them to take out drones and maybe even other people!” Nellie growls. “Tools are getting spit up as we speak, but you got to promise me—right here, right now—that all of us are going to be safe around them.”

Mollie nods.

“No matter what,” Nellie adds. “Because, if they have to leave this island in order to get stuff, then they need a decent mechanism of self-defense... I plan to let them keep their firearms, so I need to know that I can trust them not to kill me while I sleep.”

Mollie nods again. “Benjamin and I will program them accordingly.”

Nellie raises an eyebrow at her, and Mollie smiles.

“None of them are going to be autonomous beings after I fix them up,” she utters. “The plan is for them to be under direct human control all the time.”

Nellie softens her expression a little. “Athie mentioned something like that... You sure we can trust those Leeches on Mars with them?”

Mollie takes a deep breath. “Yes.”

But a more honest answer would be ‘no’, and she knows that Nellie can see every semblance of doubt bubbling up behind her eyes.

¹⁶⁶ (Doody and Stephan, Chapter 14. Launch Phase 2015)

“Fine,” Nellie mutters, beginning to back towards their vehicle. “Tools should be ready in ten.”

. . . .

Mollie almost feels as though she were in college again—overambitious robotics engineering major trapped in lab with lamer-than-lame partners on another Saturday afternoon, still striving for perfection after twenty-four hours of non-stop coding and testing and coding and testing of *her* creation—another moment of truth... She just hopes that everything works right this time... She doubts that it will.

‘Never hurts to hope.’

She rubs her eyes and stifles a yawn. “Not used to pulling all-nighters anymore,” she mumbles, glancing up at a row of ash-and-dust-caked and half-shattered windowpanes along one wall and noticing a trickle of noon sunlight. “Gosh... Okie... Here goes nothing.”

She enters a new command into Casper, and the q-unit begins to whir... but the robot before her, one of the less dead-looking machines left on the island, fails to react... again.

Mollie sighs.

“You like you could use a break.”

She looks up, meeting a pair of kind and ever-smiling emerald eyes.

“Get some sleep,” Jack suggests, as he offers her a filled canteen of water. “Might help you figure out what you need to do next.”

Mollie nods, allowing herself to take a long sip of water. “Thank-you.”

“No problem,” Jack replies. He plops down beside her and contemplates something about that robot. “Mind if I...?” he asks, gesturing towards Casper.

Mollie blinks.

Then he pulls the q-unit on to his lap and begins to look through her code. “Did you mean to include this here?”

Mollie traces his fingertip towards the block of code in the center of the touchscreen. She stares at it for a moment, all of those commands swimming before her exhausted eyes, and nothing seems to register in her brain. She shakes her head. “I have no idea.”

Jack nods. “In that case...”

Mollie watches in horror, as his fingers tap the touchscreen and begin to erase and add and erase and add lines of code.

Then he pauses, scrutinizing his work for a moment before compiling and exporting everything to that gosh-darned—

Mollie gapes at that robot, as its eyes light up, and its spine straightens.

Jack returns Casper to her and gets to his feet. “Take a nap,” he orders. “Please.”

Mollie just stares at him for a moment. *‘How...?’*

“I’ll be around to help you more when you wake up.” Then Jack flashes her a grin and wanders away.

Mollie shakes her head. Then she closes her eyes, and, in less than a heartbeat, she is fast asleep.

. . . .

She wakes with a start, moonlight spilling through a crack in a window high above her lab bench—her pillow since goodness knows when—and she remembers where she is—Green Room, a wind-and-solar-powered rapid-prototyping space within Cerebrum. Then she remembers that robot, and she pushes herself back on to her feet.

“Evening.”

Mollie whirls around. “Evening?”

Jack nods. “Technically night, but ‘evening’ sort of sounds better... Enjoy your nap?”

Mollie stares at him for a moment, as he reattaches a robotic hand to a robotic wrist and enters a short command into Casper. Then five robotic fingers curl inward. He enters another command into Casper, and those same five fingers open up again.

“Awesome!” he murmurs to himself.

Mollie shakes her head. “Where did you learn how to do all of this?”

Jack glances up from that robot. “I used to camp out in this hospital up north—shit happened, and I had no place else to go—and I sort of developed a habit of following people around to find another bite to eat or a new place to hide or, sometimes, just to watch an operation or something... I got into all sorts of trouble—wrong place, wrong time—but, instead of trying to get rid of me, one of the MDs in the ER decided to put me to work.”

“Doing what?” Mollie inquires.

Jack shrugs. “Everything.”

Mollie raises an eyebrow at him.

“Coolest thing I got to work with was bionics,” Jack muses, grinning at nothing in particular. “MDs taught me how to design them and program them and do those surgeries and everything... These robots use that same kind of tech.”

Mollie nods.

“So,” Jack continues, getting to his feet, “I’ve been thinking—with your permission, of course—I might be able to make a device for Athie... for her eyes... because we’re going to need as many heads and hands as we can get, and she’s just itching to do more than sit around and wait for updates from Andrew.”

“You would do that?” Mollie breathes.

“Yeah,” Jack replies. “Once we resurrect a few more of these robots and link them all to Mars, I’ll have enough time to work on something like that, and, once they start bringing materials back to Kennedy, I’ll have everything I need to spit up a few prototypes.”

Mollie nods, shocked and speechless.

“Cool,” Jack utters. Then he gestures towards that robot. “So, before I bring in another slew of patients for us to revive, let me show you what I did to this one.”

[Mars;; 8]

SUBJECT = Fiona Jameson; ID = FJ20273

Fionna taps the same key on her keyboard a few times. Everything is going well—almost too well.

When Andrew had first explained the idea to her, she had thought that it was absolute madness. And even now, as she helps him make it happen by testing everything about the scanner, she still thinks that it is insane.

“Insane,” Kirkpatrick tells her, placing a hand on her shoulder and looking into her eyes in a way that makes her heart beat straight out of her chest. “But possible.”

“Of course it’s possible,” she responds, walking away from him to look at the x-rays on the opposite wall, feigning interest in the way the bones all slot together. Despite the fact that Fiona is pretending to be interested, she had listed off the bones from memory. She reminds herself that everything Andrew has been planning is still theoretical. “The science is there, but there’re so many things that could go wrong—”

“—I know.” He puts his hand back onto her shoulder. “I know.”

In Fiona’s mind, things like testing machinery are right up Anikka’s alley. Normally, she would expect the woman to want to do it. But ever since Andrew had made her aware of my condition, no one has seen the woman around, as if she had vanished into nothingness the moment she realized the Iliad in me was no longer there to keep her company. Fiona reaches into her pocket and squeezes the cool metal bit she hides there. *‘It’s better this way,’* she thinks. *‘Sooner or later Anikka will get over it, and all of us can get back to work, get back to doing things we’re supposed to be doing.’*

“It’s better this way,” she reminds herself through clenched teeth.

Fionna looks at the scanner. *‘Anikka can wait.’* She places a hand upon its sleek metallic surface—her whole issue with me, with Anikka’s blind insistence that robots like me actually think and feel, would have to wait. The scanner is here to take more detailed 3D images of anything amazing they find.

More than once the humans have attempted to make a printer to accompany it, to replicate various parts that have broken or gone missing, but making one has been difficult for them since gutting out of all their unneeded robots, and the plastic ink they have on hand has a tendency to melt quickly when used to supplant metal parts.

That, too, had been an Andrew Idea that spectacularly failed.

‘It had been worth a shot,’ Fiona reminds herself. *‘Not like hiding in my lab that whole time was helping anyone.’*

“I don’t hide in my lab,” she mutters to the nothingness, as her fingers ghost over familiar buttons, and she hears a small beep of confirmation that her request has been received by the scanner. “I do scientific research in my lab. It’s more than anyone else does.”

‘Is it? Does it help anyone? Does it keep anyone alive?’

Fionna focuses on the sound of the scanner, faint and efficient, as it rotates around the broken head of one of their rovers. “It could,” she mutters, her voice soft and lacking conviction.

“If I just made some sort of discovery, a breakthrough, then we could—”

‘—we could thrive?’ It feels like her own mind is mocking her... *‘That’s rich.’*

“If I discovered some kind of... new material then—”

‘Now who’s holding onto fantasies?’

“The science is there. It’s possible—”

‘If there were some secret super-metal up here, we would have known. The world would have known.’

Fionna bites her bottom lip, as the scanner finishes. The 3D robotic head opens on her screen. She spins around it, comparing it to the original, as if she were on autopilot. It feels like her own hand is miles away from her, and walls are closing around both sides of her head, like blinders on a horse.

‘They’ve had eyes up here for years. This was always the next bold step forward.’ Her mind races ahead of her, even though she is thinking of nothing and trying to push her thoughts away, they keep coming, keep pushing against her, adding more and more stress until her head feels ready to pop. The sound of her own hand slamming against the keyboard jolts her out of her thoughts.

Her hand goes into her pocket and closes around the chip she removed from me.

It is still cold. And yet, to her, it feels like it is pulsing.

Nausea bubbles up from the pit of her stomach. She does not know if she is feeling guilt or if her stomach is finally mutinying against her and demanding food.

‘Maybe it’s both.’

She takes a deep breath to quiet her mind.

Looking at it, she concludes the robot head has been decently scanned. There are places that have not come in right, but, according to Andrew, no one needs it to be absolutely perfect. Just the fact that the information has been successfully inputted into the scanner and interfaced to the computer is enough for their purposes now.

Fionna takes another deep breath and feels herself calm down a little bit.

She looks over to the scanner and sees that it is just big enough for something as big as a person to lay on.

She squeezes my personality chip then slides the lab coat off her shoulders.

[earth;; Two Weeks]

“Wake up Farea,” Arine shakes her slightly, “time to get going.”

Farea rolls under her sheets, turning her back towards Arine. She feels warm and cozy in her sleeping bag and doesn't want to get up. Trying to fall asleep again, Farea starts counting sheep. *‘One... Two...’* But after a short while she realizes that her mind is actually starting to function... Still reluctant to get up, she remains silent for a couple of seconds.

“What time is it?” she grumbles at last.

“Time for you,” Arine grabs her sheets and yanks them off, “to get up!”

Farea grunts, half opens her eyes, and leans upwards. Brushing her hair out of her face, she looks around, seeing the familiar tent they set up. Big enough to fit four people, but nothing too fancy. The place is almost empty. *‘Must be time to pack up and move again.’* She sighs.

Next to her, Arine is folding her sleeping bag. Her red sleeveless T-shirt makes her broad shoulders more imposing. Her long khaki pants, alongside her black boots, give her a military look, as if she just finished her morning workout. She is carrying a small blue backpack. A thin tube, coming out from the front, rests on her left shoulder strap.

“Water...” Farea asks. Her throat is a little bit dry, but what she really wants to do is wet a cloth and wash her face.

“One sec,” Arine replies, as she applies more force to the straps around her sleeping bag. Farea can hear the straps tightening; the sound gives her goosebumps.

Immediately after finishing, Arine takes off a blue rubber cap from the end of the tube and pours some water inside a small biodegradable cup. She gives it to Farea then continues to rearrange some things inside the tent. Farea reaches towards a cloth she left beside her before going to sleep and dumps all the water on it.

“Refreshing,” she tells herself while cleaning her face.

“If you need more water, just ask,” Arine says. “We have plenty. Besides, the bottle we got from L really helps us get water anywhere.”

Farea passes the cloth over her arms and neck. She closes her eyes and take a deep breath. Slowly exhaling, she can feel all the blood rushing up to her brain. Feeling slightly dizzy, she goes on her back. Bringing her hands right behind her shoulders, she pushes and kicks up. Almost losing balance on the landing, she taps on her pajamas to remove any dust or hair and steps outside the tent.

The scenery is very different from any place she has lived in. Thin trees grow around them. Light trickles out from small gaps in between leaves, giving the atmosphere a more mysterious appearance. Despite leaves blocking most of the sun, Farea can feel its warmth. She inhales deeply, smelling the humidity in the air, as she stretches out and does a little bit of yoga. Closing her eyes, she relaxes her sleepy mind and focuses on the different sounds. Bugs flying around, birds humming in the distance, sporadic splashes from the nearby pond. She also hears slight footsteps on mud.

Farea opens her eyes. A couple of feet away, a tall black woman is coming towards her. Dressed with brown and red clothes that reach her ankles, the woman is carrying several large snakes around her shoulders. Still looking exhausted, Farea glances up.

“Sleepy head,” the woman yells at her. “Come and help me with these snakes!”

Farea stands and walks slowly towards her, taking her time to stretch every muscle necessary for the task.

“Hey, Ursa,” she says while stretching her arms. “How was the hunt?”

“Don’t...” she pants, “talk about it...”

Farea positions herself on Ursa’s left shoulder and picks up the tails of the snakes. The sudden heaviness of the creatures takes Farea by surprise. Kneeling down, she pushes back up, puts the snake tail behind her neck, and starts moving. Both of them walk together, side by side, as if they were assisting an injured person.

“God, these are heavy.”

Ursa remains silent. They arrive at the tent and drop the snakes. Arine comes out, brushing her hair. She counts the number of snakes with her fingers.

“Three...” Arine says.

“Look at how big they are before complaining,” Ursa protests. She stretches her back and goes inside the tent.

Arine tries to lift the biggest snake. It is a couple of inches thick, with smooth grey skin and brown spot patterns along its body. She looks at its ends, and to her surprise the head has been decapitated.

“Ursa, where’s the head?” Arine exclaims.

Ursa comes back out with a small Swiss knife. She carefully goes through the different utilities and ends up choosing the small pair of scissors.

“Ulyss, you don’t know how to hunt?” she says, as she turns the snake on its back.

“Never needed to hunt a snake before.”

“Well,” she starts cutting the snake through the underside, “you can’t leave the snake’s head lying around. It’s still alive even though you decapitate it.”

“But we could have used the venom to make medicine in case anyone gets bitten.”

Meticulously cutting the snake, Ursa stops at the belly. She swipes the blood from the scissors, and uses the knife to cut the rest of the underside.

“This snake is a Burmese python. They do not have any venom in them.” Ursa starts ripping off the skin. “How do you think they hunt?”

Arine shrugs. A small vibrating sound comes from inside the tent. She goes in to check it out.

“Just logically speaking,” Farea says, “I guess strangling?”

Ursa nods as she finishes peeling off the skin. She puts several fingers in the neck, and starts pulling out the snake’s gut.

“Correct. By being this massive, they can strangle their prey very easily. However, do you know what the most impressive thing about this species is?”

Farea shakes her head.

“They can adapt very easily to their surroundings. Invasive species, to be more exact. They rapidly adapt to new environments.”

Farea looks at her. “You know a lot.”

Ursa chuckles. “I have a degree in Biology. Pretty useless now, but I earned it, night after night of studying hard... Feels nice to actually apply something I remembered.”

Arine comes out of the tent with a small graphene sheet. Turned on and lit with several small LEDs, the graphene sheet is so thin that Farea can see the reverse letters of the message sent to Arine.

“How did you get the message?” Farea asks. “I thought the internet age was over.”

“It is, but somehow it detected a radio frequency wave and deciphered it. But in any case, we need to get on the move.”

Ursa, finishing her second snake peeling, looks at her and makes a face. “I’m not even started with the third. What’s the hurry?”

Arine flips the graphene sheet towards them. A short message is displayed.

Found them, the message moves from one end to the other, Meet us at Ground. You have two hours.

“Took two weeks.”

“Who did they find?” Farea asks.

“Yeah, freaking two weeks!” Arine interjects. “In one week, we scouted only the West coast of Florida. We were given the oldest car.” She points at a 2015 white Honda Civic. “That shit is ancient!”

Ursa starts skinning the last snake.

“I’m pretty sure we could have scouted all the West Coast in a couple of days if we had a more modern car,” Arine protests.

“Stop complaining,” Ursa tells Arine. “You are an annoying little brat when you whine.”

Arine stands in front of her. She looks down at Ursa, glaring at her with incriminating eyes. Ursa finishes skinning and removes the gut of the third python.

“Don’t call me brat.”

Ursa looks at her. Her hands, bloody from all the butchering, hold the gory Swiss knife. “What are you going to do?” she inquires, pointing the knife at Arine. “Not drive me back?”

Arine looks at her one last time and turns towards the tent.

“Let’s go, I don’t want to irritate L,” she says, as she enters the tent.

“Well...” Farea sighs. “Time to remove the tent.”

“Go fold your stuff,” Ursa orders, as she starts digging a small hole. “I’ll cook breakfast.”

Farea hesitates, wondering what she missed while she was asleep. “Who did they find?”

“No one!” Arine answers from inside. “Just some bits and pieces of the nicest cars!”

“Whose cars?” Farea responds.

“What a waste!” Arine continues to complain. “We could have used one of those! And we would have brought it back in one piece!”

Ursa sighs, looking at Farea. “Bowen, Yum... Zetius.”

[Mars;; 9]

SUBJECT = Andrew Vancoss; ID = AV63900

Andrew is so unused to seeing Anikka's personal code that he almost thinks he is looking at someone else.

It is not so much that Anikka hates going into the Simulation; it is just that she rarely does it. The woman prefers to tend to the settlement's electronics rather than run around in the Simulation; she likes to feel as though she is doing something proactive rather than doing nothing at all. Of course, this means that not seeing her wild halo of hair and big owlish eyes leaves Andrew with an underlying sense of inherent wrongness as well as a strange, unfamiliar yearning.

The man is not too proud to admit that having Anikka around all the time for his shifts at the terminal makes everything less dreary and lonesome. The dim room, lit by a low light and the terminal screen, seems less empty when he can see a black dandelion and flailing brown arms out of the corner of his eye. Knowing that he is sharing the more immediate space around him with someone else just feels... nice.

But now he is watching the woman through the Simulation, both cheeks cradled by his palms like he is watching a particularly perplexing broadcast.

Mostly because her actions do not seem to make any kind of logical sense to him.

The Simulation is designed to direct the user to a goal, which is why the minimap is always there. The whole point of the program is to get the user in the Simulation from where she starts to a point of interest with as little stress as possible along the way. The Simulation creates pathways and sources of light in the direction it wants the user to go. The humans understand that this is how the Simulation is designed.

And yet for the past hour or so Anikka has been ignoring this protocol.

She had flat out ignored the minimap when she had spawned into the Simulation, turned almost 180 degrees, and walked deeper into the darkness of the cave she found herself in instead of towards the obvious sunlight.

Under any other situation, Andrew would be sending her messages and telling her to turn around and go back, to be wary of danger, but the Simulation has no danger, so instead he watches her explore, ignoring the Simulation's attempts to engage her and get her to do something. The man watches Anikka wander in the darkness for a frankly ludicrous amount of time; right now he is pretty sure she is not even walking anymore.

He is fairly certain she has hit a wall.

Although, he is also fairly certain there is tactile feedback for something like that so...

Andrew decides to ignore what she is doing for the moment. Trying to understand her makes his head hurt.

Still, his eyes keep straying over to the screen on which Anikka's seemingly nonsensical trek through the cave is displayed. Eventually, the cave brightens up. Its walls appear to be lined with mushrooms and algae, with caps so wide that they almost looked like umbrellas.

This is new to him.

'Had Anikka known this would happen? Did she expect this?'

He does not want to rule out anything. What Anikka knows is always more or less an absolute shot in the dark for him. He does not doubt she is intelligent, but her thought process...

Her mind is on a different level from the rest of them.

'She will be perfect,' he thinks. Her unconventional thinking will be exactly what the humans need to make his plan come to fruition.

. . . .

Athie's familiar voice rouses him from his work, the same work he does every time he is on terminal duty. They exchange pleasantries, short anecdotes about what has happened since their last transmission. It is the only way they get any form of news from Earth up on the settlement. Her stories sound like things from video games—wastelands scarce with water and food, but rich with people who need those things.

Andrew rarely has anything to say—he spent much of his time since the last transmission wandering in the changing expanse of the Simulation, but even that had started to grow stale and tiresome. There are only so many times a human can walk across infinite worlds, different in similar ways, before they start to feel like he has seen this before.

“—so that's how she and Jack are designing it,” she finishes. He can hear a grunt of exertion in the background, something metal moving. “This new spitter.”

“That's great.”

“Did you find a scanner?”

“We had one,” he said. “We used to use it to catalog sediment and missing parts.”

“Does it work?”

“I put Fionna in charge of testing it.”

“Okay...”

There is a moment of silence.

Andrew laughs lightly, disguising it as a somewhat violent clearing of his throat. “Right, does the—what did you call it?”

“Spitter.”

“Does the ‘spitter’ work?”

“It's still being built.” A pause. “Do you happen to have any sensory neuron calibration data on hand?”

“Uh...” He clicks around the terminal. “I do.”

“Whatever you have should be fine.”

He sends it away.

“So,” Athie speaks up. “I know you sort of have a plan in mind for these Resurrects, but all of us have been thinking of some other things that we could use them for, and...”

“And?”

“We’re definitely going to turn them into a sort of... avatar... for you guys...”

Andrew nods. “Yeah?”

“Well,” she continues, “all of these robots we’ve found lying around KSC haven’t been used in a while, and I guess most of them look like they also haven’t been usable in a while...”

“But you still think we might be able to connect our telecomm systems with them and control everything from up here?” He puts a hand to his face.

Andrew’s mind is racing, as he thinks about this. The more his mind races, running over the possibilities, the more he thinks that this ridiculous plan of theirs might actually work. He runs his fingers over the keyplane in front of him, muttering to himself for a moment. “Our signal processing capabilities up here are limited, so we should keep information transmissions low.”

“Real-time information transmissions over 34.8 million miles are best kept light, even with a functional QuComm system to handle them.”

Andrew nods. “Yeah. Just make sure you include GPS coordinates in them. We have maps of Earth taken by satellite. The Simulation uses those to make a space for us. Limiting that area to the size of Florida is easy enough, but we need more precise location data in order to keep track of each individual robot.”

‘How will we handle new information?’ he wonders... Certainly buildings and perhaps even entire cities have been built since the last time their Earth maps were updated.

“If you have any more recent maps of Earth on hand, then send us a copy of them. Plus, we need data from some sort of vision system to detect buildings and trees and other things we can’t see in satellite images. I doubt running into palm trees is part of the plan.”

“Will LiDAR work? With Infrared? Because we have spitter designs on hand for a roof-mounted system...”

Andrew hums. “LiDAR and Infrared will work fine. I can make a program that takes in 3D point clouds and converts them into something the Simulation can handle, so images display properly for us. Properly-ish. Is there any way that we can get material-surface information? Like, the color of things, or maybe the texture?”

Athie takes a second to respond. “I have to double check with Jack; I think he’s already planning to make something, because he’s the one who asked for sensory neuron calibration data in the first place.”

“Okay, good. That makes the Simulation’s job—and by extension our job—much simpler.”

“So, anyway,” Athie continues, “all of these robots we’ve found so far have, um, been armed... with autonomous guns... so we were planning to refurbish the weapons system and use it to help protect us and stuff.”

Andrew’s brow furrows. “Protect you? From wha... Oh. Right. The whole, ‘world in chaos’ thing. Okay, yeah, that’s probably for the best.”

“Yeah... So we might have to program everything so that...”

His eyes wander to Anikka, who is climbing up a jagged rock face. He wonders if it is possible to cut your hands in the Simulation. He wonders if it would hurt. Andrew has to remember to ask her next time he sees her in person.

“I think we can make that work, don’t you?”

Andrew nods. “Yeah, I think we can. I’ll have Kirkpatrick send you something to use for a test run.”

Athie is quiet, and Andrew’s fingers move to end the call.

“Andrew?”

He stops. “Hmm?”

“Everything is going to be okay.”

“...Thanks.”

His body slumps after he ends the call, and he puts his face in his hands and groans.

As his hands slide down his face, he comes to realize that he does not want to tell Fiona about this part of the plan.

Anikka’s transmission soon goes dark, and he knows that means she is checking out of the Simulation for now. It will only be a matter of time before she comes into the terminal.

Andrew sits at the terminal with his hands folded, running over the same idea in his head once, twice, three times, before deciding on exactly which words he will use to ask her.

It would be best to keep things simple after all; simplicity and honesty are the easiest ways to make her understand.

Owlish eyes appear in front of him.

Andrew jumps back. “Oh! There you are.”

She nods then tilts her head, making a sign with her arm. That one he has seen enough to understand instantly. “I’m not thinking of anything important.”

Her expression is unamused.

“Well, I am. There’s something I need you to do.”

Anikka repeats the sign she made before.

“I need you to test the Mars-Earth avatars. Athie seems to have taken to calling them Resurrects. Probably from one of those old plasmas, one archaic enough to be on paper.”

Anikka nods her head in understanding.

“Will you do it?”

She hesitates a moment. Then she nods.

The way her hair sways as it bobs up and down brings a smile to his face.

[EARTH;; Spitters and Prototypes]

“Wait, wait, wait,” Nellie rushes, snatching that Casper q-unit away from Ben again to re-examine a list of specifications for their remote QuComm platform design.

He begins to shriek like a banshee, and Nellie shoves that damned thing back into his chest.

“I just wanted to see those CAD drawings again,” she huffs, rolling her eyes at him and crossing her arms, “and maybe adjust the location of the power supply so that we can recharge everything with those photovoltaic cells on their—what did Jack call them—epidermis panels...”

Ben shields Casper from her with his entire being and shakes his head. “No.”

Nellie groans. *‘Only reason I even offered to help these damned Leeches with their space shit is because Jack wanted to wait for a response from Andrew!’*

“Just...” Athie cuts in, “Be patient with him... Please?”

Nellie grits her teeth. *‘And, lucky for them, he got distracted by these damned robots and begged me to hang around a little longer!’*

“What else do we need to include here in order to connect these robots to that QuComm system?” Nellie growls.

Athie and Ben take a moment to run through their mental checklists.

“Nothing,” Athie concludes. “We should be good to go now.”

“Software, Athie,” Ben points out, and Nellie just about pulls a handful of hair out of her head.

“Is our receiver system *hardware* design good enough to show Mollie?”

Both Athie and Ben nod their heads.

“Okay,” Nellie mutters. “On to signal processing shit!”

Athie nods again, and Ben positions his fingers over his touchscreen keyboard.

“So...” Athie begins.

Nellie and Ben fight over Casper for another four hours, as Athie attempts, in vain, to mediate between them while explaining how data from all sorts of sensors and imagers on those robots needs to be filtered and converted into qubit streams and entangled with photons on Mars... Then Nellie loses her cool, and Ben lapses into a sort of psychotic episode, and Athie shoots Nellie this look—verge of tears and brink of explosion—enough rage welling up within her silver eyes and coursing through her clenched fists to warn Nellie that, if she were still able to see, then she would be doing some serious damage to her right now.

Nellie takes a final swipe at Casper to get her hands on that data disk with all of their CAD files on it. Ben lashes out at her with a renewed vehemence, and she dives beneath his wild blows. Scooping his q-unit into her arms, she rolls aside, taps its screen, and ejects that disk. Then she books it out of LCC and jogs over to Cerebrum.

There are six of those robots now—Resurrects—Jack and Mollie call them Resurrects—humanoid heaps of scrap metal and spitter plastic and salvaged parts, complete with glowing eyes and gaping mouths and twitching limbs. They haunt the basement of the old First Mars building

like ghosts in a dungeon—shadows—one with the walls but not all a part of them—animate—almost alive—but not at all living.

In another eight hours or so, Nellie knows that she will find a seventh among them. Just a glimpse of one is enough to chase a chill up and down her spine and tie her stomach into awful knots, and Jack says that he and Mollie intend to fix at least fifty-five...

Nellie ducks her head, scurries past those first six, and slips into Green Room. “Mollie?”

Mollie glances behind her, running a few cut, burnt, scarred, and wrinkled fingers through her silver hair. “Oh... Nellie... Do you have those spitter designs already?”

Nellie nods, holding out that hard-won data disk.

“Wonderful,” Mollie sighs. She struggles to her feet and accepts it into her upturned palm. “Let us see what we have to work with here.”

Jack grins at Nellie through pair of dangling robot legs, as Mollie strides over to a q-unit and begins to pull CAD drawings off that data disk.

“Long day?”

Nellie takes a deep breath and forces herself to smile back at him. “You have no idea.”

He chuckles. “That look is giving me one.”

Nellie sighs, plopping down beside him and resting her head upon his shoulder.

“I know,” he murmurs, and she feels his arms slip around her waist. “Twenty-four hours—soon as we link one of these Resurrects to someone out on Mars—”

“You said that before,” Nellie mumbles.

“Yeah... I did.”

Nellie sighs again. “Anything I can do to cut that down to twelve?”

Jack pauses for a beat. “Um...”

Nellie meets his two pleading puppy eyes and shakes her head. “No.”

“Please?”

“No! I mean, fixing up firearms for them is one thing, but spitting up... *flesh*...?”

“It’s not *flesh*—Look, Nell, if we could transmit real-time video data to Mars with this QuComm system, then we’d just be asking you to spit up a couple HD cameras¹⁶⁷—”

“Eyeballs too complicated or something?” Nellie retorts, and Jack scoffs at her.

“We got to transmit a decent audio signal on top of all sorts of system status updates, and we can afford to mix in real-time LiDAR and Infrared data and GPS locations to give people on Mars a general sense of where their Resurrects are, but those images—”

“Lack critical information and shit—I know,” Nellie snaps. “But—”

“We got to give them a decent sensory feedback mechanism—”

“We got to use *flesh* to do it?”

“It’s not *flesh*!” Jack exclaims. “It’s an artificial skin graft comprised of microscopic sensors embedded in a phospholipid bilayer!”

Nellie shakes his arms off and turns her back to him.

“I just need a spitter that can—”

¹⁶⁷ (Peng, et al. 2013)

“No!” Nellie snaps.

“It would take me a lifetime to develop an inorganic equivalent!” Jack begs. “Those membranes around live epithelial cells—”

“These look great,” Mollie interjects, poking her head around that robot. “Spit everything up tonight; we need to have a prototype assembled before sunrise and connected to QuComm before Andrew contacts us again.”

Nellie pouts up at Mollie.

“Okie?”

Nellie feels obliged to nod.

“Oh! And, once you and Benjamin and William finish up with that, would you be willing to start repairing their guns?” Mollie adds, glancing back at those six ghosts hovering just outside the door.

Nellie grits her teeth and glares at Jack. “Yep... How many do we need, and when do we need them?”

Mollie exchanges a look with Jack. “Fifty-five... each made available for use, as its Resurrect is readied to be linked...”

Nellie rolls a few bitter words around in her mouth before settling on a more tasteful response and a less reluctant expression. “Fine.”

Then she returns to feet and storms out of Green Room... to go spit up their damned remote QuComm platform... *‘Twenty-four hours—Jack said twenty-four hours.’*

She hopes she can reduce it twelve.

. . . .

Sunrise creeps up out of nowhere.

Nellie stares at those streaks of pink and gold above the eastern horizon, her vision sort of distorted and bleary, her eyelids almost drooping shut. Then she yawns and makes a serious effort to concentrate on their half-assembled prototype again.

“Oh, come on, Will!” she groans, noticing another component out of place.

He lifts his head up and glowers at her. “Fuck off, Gunflinger! That bit there was all you!”

Nellie shakes her head. “Right... I can... um... fix it.”

Will nudges her aside. “When I said, ‘fuck off,’ I meant ‘fuck off’—because I know you’re too fucking tired to function, and, right now, you’re just fucking up everything you touch!”

Nellie sort of nods.

“Just... sleep,” Will grunts. “I can finish this. Jack should come to wake you up before we link.”

Nellie hangs her head. *‘Fair enough... I forced him to take a nap before.’*

“Okay,” she mumbles, staggering a step away from their prototype. She has not slept much since that night Athie and Will and Mollie and Ben crossed Indian River with her vehicle in tow, and she keeps neglecting to eat.

“I got reasons,” she mutters to herself, wandering out of a rapid-prototyping lab called Red Room and into a stark white subterranean corridor, “and I know at least one of them is convincing.”
Fear.

It permeates her mind like radiation after a nuking, and it sits in her stomach like a loaded ballistic missile launcher, warding off exhaustion, appetite, hope, trust... It pains her, seeing those brand-new missile dents and bullet scrapes all over her JLTV, remembering that massive fleet of drones and those myriad weapons stored alongside graphene battle armor and scuba gear in a room of their Hall of Fame that used to be a chapel^{168,169}, knowing that Jack sort of used to be one of them, and guessing that Chief would do almost anything to jack a vehicle like hers and bring a Brain like him back to his force...

“That damned ex-officer underground is coming for us,” Nellie spits, plopping down outside of Cerebrum and clenching two handfuls of hair, “and we got to be ready for them before they get here!”

She refuses to sleep—again. Instead, she returns to her vehicle, powers up her q-unit, and begins to mull over ideas for Jack’s damned skin-graft spitter.

“Damn it—I got better things to get done now!”

She slams her fists into her steering wheel and shuts off her q-unit. Then she takes a deep breath to clear her sleep-denied and nutrient-deprived mind before immersing herself in cleaning all seven of her everyday-firearms—six handgun-sized devices and one sniper rifle—until their bores are gleaming like an ocean under a newly-risen sun.

“Okay...” she breathes, allowing her eyelids to droop shut for an instant. “I can do this... I just got to make him a spitter... a plain-old, cell-eating, flesh-spewing spitter.”

And, when Jack appears outside her driver-side window at half-past noon to announce that long-awaited message from Mars, she has a working prototype to greet him with.

“Thank-you,” he utters, as she lugs his damned spitter out of her back space and shoves it into his chest.

“Use it well,” Nellie grunts, crossing her arms. “Otherwise you can figure out how to fix it up yourself.”

Jack grins. “Fine with me.”

“Good... Now let’s go link that Resurrect, so we can leave—I’m getting sick of this space shit.”

Jack nods. “I know.”

“Sure,” Nellie scoffs, marching off to Cerebrum.

“Tell me something, Nell,” Jack calls after her, and she whips around to face him. “You keep calling them Leeches and complaining about helping out with their launch and swearing that everything you do for them is just another maybe-mistake. Then you storm off and shut yourself up in that JLTV and just keep doing...”

Nellie opens her mouth.

¹⁶⁸ (American Police Hall of Fame and Museum 2010)

¹⁶⁹ (Kiley 2015)

“Tell me why.”

Nellie stares at him, and, all of sudden, she remembers...

“Why?”

Her voice.

“Nellie, why did you do this to us?”

Whispered words and wounded eyes.

“Why did you give away a full gallon of our water reserves—our water reserves—to a complete stranger?”

Silence.

A flicker of fury. Then a pang of guilt, a rush of regret.

“Nellie—”

“Because we have more, and he had none.”

Her own quiet voice, but five years younger.

Auntie Gene shakes her head behind two quivering hands.

“We had enough for us.”

His voice.

His heart-stopping glare.

A shiver of panic sprints up her own arching spine.

“And now we don’t—because of you.”

Silence again.

Then his face—his livid eyes—dead even with her own.

“One gallon of water in this heat does nothing for a hopeless lowlife like him. He’s going to be dried-up dead before sundown, and we’re going to be a gallon short of joining him until our next ration!”

Nellie squeezes her eyes shut. His words had seemed so true then, but, of all the dried-up dead corpses littering streets and alleys and sidewalks alike between the inn and the interstate that night, none of them had belonged to the stranger.

“Because,” she begins, her voice cracking a little, as she faces Jack again, “I have... and... they need... and—”

Jack lowers his spitter on to the ground and clutches Nellie against his chest.

“You keep doing, too,” she finishes.

“Yeah... I do.”

Nellie sort of holds her breath. “So... after we... cover this Resurrect with... skin... and link it to QuComm and integrate it into their simulation and stuff... are we going to... stay?”

Jack meets her weary gaze and shrugs. “You tell me.”

[Mars;; 10]

SUBJECT = Anikka [Unknown Last Name]; ID = AN40323;

Anikka can hear everyone speaking around her, as she finishes installing the chip, one of several she has salvaged from old rovers. Repurposed by Andrew and herself, its new function will be to relay information to and from the Resurrect waiting for her back on Earth.

These robots seem, in many ways, less complex than me, running on software that would pale in comparison to the programs that used to make me Iliad. Their external coverings, grafted with sensory receptors and flesh-based epidermal panels, are their saving grace.

SUBJECT = Christian Kirkpartrick; ID = CK03600;

“Now, this initial run is a test drive,” Anikka hears Kirkpatrick say. His voice is deep and makes her stomach vibrate as he speaks. “We just want to make sure that you can safely connect to the Resurrect they’ve prepared.”

She nods to him and looks at his face. He looks more worried than she feels, and she is the one whose mind will be making the 55 million kilometer leap across space to a robotic body resurrected out of metal and plastic and human ingenuity.

She has always had an affinity towards robots, but never once did she think she would be becoming one of us.

Once the chip is completely in place, she puts the OvTool back into her utility belt and lies back on the bed, closing her eyes.

SUBJECT = Andrew Vancoss; ID = AV63900;

“Ready?” she hears Andrew ask.

Anikka slides the new connecting headgear into position over her ears and eyes and replies with a hesitant thumbs-up. There is a gentle tapping, a softer whirring, and another exchange of murmurs.

Then their voices are pushed into the background, as everything goes totally black and silent and remains so for a moment before she hears anything again.

The sounds are unfamiliar.

It is a while before she begins to see. Based on old satellite photos of weather patterns from before Mars and Earth lost contact, the Simulation is showing her an overcast sky with clouds; the air is hot and dry. Moving her body proves difficult. As she bends her elbow, she hears the soft whirr of mechanical bits spinning and hissing with the motion [16].

“There!” comes a cheery voice. “Confirmed success: Our Resurrect is up and running!” It sounds like an older woman, though it isn’t one that she’s ever heard before.

Slowly, she bends each joint. Knees, ankles, wrists. She attempts to bend her fingers, and they respond quicker than she expects.

“One moment, dear. Let me help you with that.” Hands come into her field of vision. Smooth and artificial looking, because the Simulation only has so much to work with. Anikka looks at the woman’s face. Same computer-generated skin, but also well-formed eyes, nose, and lips. “Hello,” the woman says softly; at least her voice sounds natural. “Athie’s mother, Mollie, here.”

The woman holds her Resurrect’s fingers, as Anikka flexes, getting used the sensitivity of the controls. It feels like she is assimilating her mind to an entirely new body as opposed to an extension of herself. Anikka flexes more of her fingers. They are dexterous enough that she is pretty sure she can still use her tools.

“How is she?”

Anikka turns towards the sound of Andrew’s voice. It sounds static and distant. It is odd—he is managing to be both millions and millions of miles away and also right beside her.

“She seems okay. She’s on her feet.”

“Mobility?”

The body moves almost how Anikka expects it to, but the response is slow, no doubt a result of the lag she has been warned about. It is disorienting to her, having a body that is supposed to be hers react so late to her motions. She shakes her head at the woman.

“It looks like she can move.”

The woman turns to her and smiles. “Where are my manners?” She holds out one of her fake looking hands, and Anikka takes it. She can feel the woman’s skin, which surprises her; it’s warm and rough. The woman gives her Resurrect’s arm a firm shake. “Welcome back to Earth!”

Meeting the woman on the other end is proving to be an experience for Anikka.

She reminds the woman of her own mother in an odd way; her face—what the Simulation makes of it—shows the same signs of age, and her hands—what the Resurrect senses of them—feel calloused and rough. To an extent, Anikka understands what Andrew has been saying about the roughness of life on Earth, but it is not until she begins to work alongside a human there that it really settles in.

Aside from that, her touch seems gentler than Anikka thought it would. Yet it is a reassuring weight, a steady hand, a careful word, that brings the old woman’s kindness across.

Feeling so much compared what the Simulation used to generate before... It is overwhelming to Anikka.

Seeing such an unfamiliar human face has been jarring to her mind. Instinctively her brain gropes for a name to put to it, but nothing comes to her. Nothing familiar or recognizable pops into her mind. It has been a jarring experience all around.

But coming out of the Simulation and seeing Andrew's face hovering over her, his eyes filled with cautious optimism, his gaunt features and prominent beard so welcoming and familiar, makes her feel much calmer.

Anikka sits up slowly. She knows Kirkpatrick is nearby.

"Look her over, gotta be—"

The doctor is already shining lights in her eyes and checking her pulse.

"Did you actually connect to the avatar?"

While Kirkpatrick tests her reflexes she nods. She opens her mouth, and he shines a light into it. Seemingly satisfied, he pulls away and wipes his hands.

"She seems alright. There doesn't seem to be any physical damage. I'll test her for cognizance after you're done."

Andrew nods.

"So," the man begins, waiting for Kirkpatrick to leave the room before looking over to her. He reaches out to touch her head. The soft feel of her hair seems to reassure him that she is okay. "What was it like?"

Anikka lifts her hands and moves them around. She tries to explain what she saw.

The Simulation did not know how to handle some things, so she has no idea if she had seen things as they actually were. She had seen a stark room inside of Kennedy Space Center, crumbling and abandoned, except for the woman and the six other warm-blooded beings within it, with robots beyond her imagination lying half-finished and unused all around. She had looked down at her hands and seen Simulation-generated human skin but felt cold silver and hard plastic.

Through the doorways and the broken windows, she was able to see the outside—and she is sure the Simulation knew how to handle that. She had seen a long plain, a ruddy green sky, and knee length grass, and she had known that it was fake. Compared to the undeniable reality of the woman in front of her, holding her hand, the Simulation was nothing but a pale imitation. It could not even capture her imagination anymore.

As Anikka moves her hands, she realizes that her body cannot convey all the complex ideas within her mind. The memories that had, at moments, consumed her mind, mixing with voices and textures from her immediate surroundings on both Earth and Mars. The sensations that her soul had felt, even though her eyes had not seen anything themselves.

She reaches into her utility belt and finds her communicator.

Her fingers fly across the screen, and she holds it up to Andrew's face.

It simply reads:

"IT WAS BEAUTIFUL."

[earth;; A Wreckage]

The plaza of Walt Disney's statue has not changed since the last time they passed through there. Oxidized bronze, Mickey still next to Walt, and the occasional lump of chewing gum still stuck on the ground. Ten members of the Sembradores, including L and Herm, are in the plaza. L, with his distinctive white military coat, is sitting on one of the benches, clenching on a transparent glass cup. Swirling a brownish liquid around in it, he takes little sips. His eyes, shielded behind small black glasses, seem to be looking at the horizon. Herm, on the other hand, is talking to Frose. Wearing a badass leather jacket, he looks like a motorcyclist ready to ride to the horizon. Farea hears the occasional laugh bubbling up from their conversation. Ursa and Kasha are standing next to each other, playing with a hacky sack. Eran, Luze, and Terris are sitting on the ground, near one of the bridges, playing cards. Farea and Arine are just standing still in the middle of the plaza, not doing anything.

"And I thought we were supposed to be having a serious meeting," Farea mutters, checking her wristwatch. "Look at this. Five minutes early."

As soon as she speaks, she hears a door open. She turns around and sees a car parked just beneath the Castle. Farea looks surprised; she does not remember a car being there before. Janko steps out of the car. Dressed in extravagant leggings with a tight thin black shirt, he starts skipping towards the center of the plaza.

L gets up and stands on the bench. "Guys," he says while putting two fingers on his throat, "time to meet."

Everyone stops what they are doing and starts gathering in front of Mickey Mouse.

"Janko, why are you late?" L says with another voice. His electrolarynx makes him sound like a robot.

"Sorry. I hate these smart cars. The sensors are too sensitive." Janko kneels down. "EVERY TURN!" He puts emphasis at the end of every word, speaking loudly and dramatically, as if he were in an opera. "EVERYYYY CRAAAAACK! The car would overrun my command and break."

"Okay, we all know that." L looks at everyone. "Is that why you took two weeks to find those three bastards?" His voice is filled with anger.

All of them remain silent. Farea and Arine had experienced a different problem. Something bigger than self-driving cars.

"Our problem," Arine says, "was to find a fucking car that wasn't taken. We had to walk until Orlando, intimidate a ganger there to give us his..."

"I don't care about your stories, Ulyss. Life advice: If they don't give you what you want, then stab them in the leg. Understood?"

Farea stops thinking. No one has ever been so blunt to Arine in front of her.

L opens his uniform and starts looking in his inner pockets. "Where do I have... Ah, bingo." He takes out a small vial.

"What's that gel?" Farea asks.

“A polymer, to be more exact,” L says. “Military usage only. Good for torture, to be honest. Prevents the need to make transfusions.”

He throws it to Arine, and she quickly catches it.

“Make torture work.” He claps his hands together. “Anyways, I need updates, people. Where are those five cars they stole from us?”

“Um... Actually,” Kasha says, “I found them. However, I think you might want to see it for yourself.”

“I want to see Zetius first, though.”

“Oh, you will see him.”

“Good, where is he? Jerking off with Bowen and Yum? Pussying out?”

“Dead.”

All of them look at Kasha.

“What do you mean, dead? Couldn’t you have said that earlier?” Herm asks.

“You remember when you said that you couldn’t self-drive the car back to base?” Kasha reaches to her pocket and brings out Zetius’ kukri knife. The knife’s guard is slightly burnt on the side, and it smells like charred metal.

“I found a car wreckage in the East, about forty miles south of Cape Canaveral. I don’t know why they were there. There was also another van, but it was abandoned earlier.” She pulls out a water-damaged picture of a small family and shares it with everyone.

“Who are these people?” Arine asks while looking at the picture. She passes it to L.

“The people we are looking for,” L says. “That’s her right there, that old sandbag we need to capture.” He points a finger to the silver-eyed woman holding the red-haired child in arms.

“Again, who are these people?”

“Our key to Paradise.” L looks at Kasha. He presses his neck, changing his voice once again. “Can you take us there?”

Kasha nods and starts walking. First Ursa, then Frose, then everyone else starts walking behind Kasha. Once L passes in front of her, Farea looks around. She spots Herm, looking at the picture. He closes his eyes and covers them with his left thumb and index finger. Looking up, he takes a deep breath and mumbles something. She walks towards him.

“Do you know any of them?”

Herm looks at her. He gives her the picture and points at the woman.

“That’s Mollie. I used to be very good friends with her.”

“Oh that’s great!” Farea says while holding the picture. “We can just ask her to help us, right?”

Herm closes his eyes again and sighs heavily.

“L kills anyone who gets in his way. He will probably kill Mollie if her rocket gets launched to Mars without any of us in it.”

He starts walking, Farea right beside him.

“Why do you follow L, Herm?”

Herm walks silently. He looks at the sky. Clear and blue, not a single cloud.

“Why do you follow us, Renace? Is there anything you can learn from us except cruelty and hard ambition?”

Farea starts thinking. “You know, I have always wanted to answer one question. Maybe you can help me find an answer to it.”

“What is it? I’m not a great philosopher.”

“What is home for you, Herm?”

Herm stops walking. He looks at Farea and grabs her shoulders. Then he smiles. “Home is something different to everyone, Farea. For me, home is being with people I care about.”

That is a new answer to her question. Every person before her would answer that home is where you and your parents live, where you came from. But, unlike all of them, Farea has traveled; she has lived in many locations and has amassed a multitude of places to say she comes from.

“So home is not fixed?”

“It is fixed if you choose it to be fixed. You’re a Third Culture Kid, aren’t you?”

Farea looks at him, surprised. “How do you know that term?”

Herm chuckles, as he starts walking. He brings out a small e-cigar from his inner pocket and starts inhaling all the nicotine it comes with. “I had lots of friends who were Third Culture Kids.”

“Oh, so can you tell me their answers?”

He laughs.

“I used to be a teacher; I don’t give answers. What’s the point of getting an answer if you don’t come up with it yourself?”

Farea frowns with frustration. Then she sees the Honda civic. Arine is sitting in the driver seat.

“Life advice, Renace,” Herm says while walking to a nearby motorcycle. “The answers you find in life must come from you, not from others.”

. . . .

The area is a big wreckage.

Farea has never seen something like this in her life. She has seen crimes taking place in front of her eyes, buildings catching fire, and ghost cities. But this takes things to a whole new level. She can see bits of tire strewn across the horizon, metal plates sticking up from the ground, and burned grass all over. The road she is standing on is not in great shape, either. Asphalt is cracked all over, and some bits of pavement are burned so heavily that she can distinguish the black traces of the explosion.

“What the hell happened here?” Farea asks Arine, as she gets out of their car.

She replies with a single shrug.

As they start making their way towards the site, a motorcycle pulls up ahead of them. At a closer look, Farea does not see any speed measuring devices on its dashboard. Herm gets off and removes his helmet.

“What year is that motorcycle?” Farea asks.

“Hmm... Probably about twenty years old, so 2030. Why?”

“I’m surprised there’s no speed meter or fuel meter or anything.”

Herm laughs.

“Is this your first time seeing a motorcycle in detail?”

“My family always used public transportation. My grandparents died in a car crash, so my father had a phobia of driving. Hell, I wasn’t even allowed to ride in autonomous cars.”

“All my condolences. Well, here, just like cars, everything is in the display,” he points at his face-shield. “Everything is projected there. Speed, fuel, even tire pressure.” He turns his helmet and points at a small opening at the top “That’s a camera right there. Perfect to check blind spots.”

L’s car arrives soon after. The doors open vertically, and he steps out. His boots, with a thin sheet of metal in the heel, make a very distinctive clanking sound. He inhales a lot of air.

“Smells like burnt shit here,” he says as he walks to the edge of the road.

As L stops, Farea looks at Herm. His white hair goes down his neck. Combined with his wrinkles on his forehead, he doesn’t look young at all. Talking quietly to each other, she and Arine make their way down the decimated land. Arine stops and crouches. She touches the dirt and feels it with the tip of her fingers.

“Very rigid and dry.”

“Hmmm.” Herm picks some of it up. He looks at it thoroughly, feels it with his fingers. “Despite the humid climate...” He crouches, takes some of the dirt, and tastes it.

Farea immediately frowns in repugnance. “That’s disgusting!”

“Burk...” he spits the dirt out and almost throws up. “Not the brightest idea I’ve had.”

“Ruined!” Farea hears a hysterical female voice with a slight European accent in the distance. “It’s RUINED!”

“Relax girl, it’s just another cloth.” This time, she recognizes the distinctive voice of Eran, and she immediately assumes the woman is Terris. “What’s the problem?”

“I don’t have clothes!”

Farea rolls her eyes. Another fight between those two douchebags.

“So don’t fucking mess with me, you insolent pest!”

“Ah... Ratatouille,” Eran says to annoy her even more. Terris kicks him in the leg, making him keel over in front of her.

“One more word,” she brings her cane up, ready to strike his head, “and I’ll...”

“You two,” says L with a terminator voice. “Stop, or I’ll stop your hearts.”

Both of them look at him. His imposing figure, combined with his small, sneering spectacles, makes them speechless. Farea feels a chill going down her spine. She looks elsewhere and finds an abandoned vehicle. Too big to be called a van, but no better name to describe it.

“Ar—Ulyss, let’s go check it out,” she whispers.

“Why not with me,” Eran says, “my choucreme?”

Farea really wants to punch him. Her fingers clench, ready to swing. But she decides against it. Instead, she lets her rage drain out her body.

'Remember L's watching,' she thinks. 'L's watching.'

Stretching her arms while yawning, Farea spots Luze and Kasha emerging from behind the van. As she starts walking towards them, the debris makes it more and more difficult to get around. Pieces of metal, combined with the occasional shard of sharp glass, make this place an obstacle course. She carefully approaches closer to the van and notices that the grass has started to become damp and green again.

"Who are these guys?" she faintly hears Luze ask. His thick accent does not help disguise him at all. "Look at all this equipment. Radar dishes and transceivers, quantum computers... Even bound-paper books on orbital mechanics and programming!"

Kasha remains silent for a moment, staring at the waterlogged interior of the van.

Luze continues to rummage through disintegrating books and damaged equipment, listing off more and more complicated terms.

"WHO'S A GEEK HERE?" Kasha screams, as she bends over. She picks up a notebook and starts turning its soaked pages.

"What is it?" Luze asks.

"Some sort of log," Kasha replies. "Someone's been writing in it almost every day. Look at the last entry. April 24th. About two weeks ago."

Farea arrives at the van. Several stains of dirt cover the side, and the doors are missing, leaving an open space to enter.

"Where did these doors go?" Farea asks, as she peeks inside the van. Nothing but dead electronics and a bunch of unplugged cables. Several pictures are pinned to the walls, and seems to be spacious enough to fit more than eight passengers. Other than that it, looks like a typical police van.

"Right next to you," Luze answers.

Farea looks at her left side. The door there is severely damaged, with snapped hinges and a large indentation in the center.

Luze points a couple of yards away, into the field where Arine and Herm are now standing. "The closest blast zone was there. Look at the ground," he talks to Kasha, as he crouches and yanks grass out of the mud. "Green and soft. Not burnt and rough."

Farea goes around the van. She notices two bloodstains going downwards. Someone must have been shot here.

"Blood..." she murmurs, as she brushes the side. A lot of blood to even consider being bled by one person. "Someone has been shot pretty nastily."

She looks around. In front of her, are trees and decaying shrubs and overgrown weeds. She hears the faint sound of bugs buzzing beneath the leaves. Closing her eyes, she tries to picture what has happened here. But nothing comes to mind. TNT would have left a crater in the middle, and a simple grenade would not have inflicted this much damage. She looks at the trunk door, which is missing a license plate and scratched in several places. She starts walking back around the van until she notices a small imprint on the right headlight. She crouches and touches it. Fresh blood, just a couple of hours old.

“Hey guys,” she turns around and sees everyone gathered in front of the yanked-off door.

“Anything you want to say before I continue?” L says, imposing himself in front of her. His large status makes his shadow cover all of Farea’s face. She feels threatened.

“Nothing L...” she hesitates. “Nothing really...”

L stands straight up and walks away.

“What has happened here?” L asks to the air.

“Well... Looks like there has been a fierce battle around here, Boss,” Eran tells him.

L turns around and meets Eran face-to-face. “Don’t state the obvious,” he coughs. His voice becomes mechanical again, and he stands straight. “Anyone else?”

Everyone looks at one another. No one wants to reply. At the same time, Farea hears tires screeching. Mere feet away from where the others are parked, a white car appears. Janko comes out of it and starts dancing his way towards the wreckage.

“Hey yoooo, wad’up everyone?”

No one replies.

“Where have you been?” L steps forward a little bit. “You left way before anyone; you shouldn’t be arriving last!”

“Well, I had some things to take care of.” Janko pokes his nose, removing a booger and flicking it aside.

“And what on Earth is more important than our mission?” L asks him.

“Many things to be honest... But anyways, it looks like a cyberattack to me.”

Farea looks at L carefully. His fists are clenched together, ready to throw a punch. His body is still, but Farea can sense that he is really displeased with Janko’s attitude.

“A cyberattack, you say?” Terris inquires. “How can you hack inside the mainframe without internet? That’s complete bullshit!”

Janko raises a finger and waves it.

“No, no, no... Easy to access.” He goes inside the van, grabbing a keyboard hook-up from his pocket. “You see...” He plugs it into a small adapter and connects it to a metallic cylinder. “It’s very easy to access the mainframe if you know how to enter.” He rolls down a graphene sheet from the cylinder and starts typing vigorously. After several seconds, L’s car starts moving towards them, very slowly. “And voila!” The car comes to a stop, right in front of them. Everyone looks in awe, except L, who does not seem to be amused at all.

“So... You can move a car?” Terris asks.

“Not only that. You can control anything. Everything in these cars, all electronics, from tire pressure gauges and engine indicators to steering and automatic transmission, is connected through a central controller area network bus. V2V systems send data through a CAN bus, too, so access to one car means access to all of them. What probably happened is that someone hacked into one CAN bus and took over every fuel compartment. The rest...” he unplugs the keyboard hook-up and stuffs it back into his pocket, “is...” a dramatic pause, “hisstory!”

Farea likes his way of presenting things. She leans towards Arine.

“That guy...” she whispers into her ear while covering her mouth.

“A CS genius. Except sometimes... annoying and... well, interesting.”

The meeting dismisses, and everyone scatters. Farea takes Arine’s hand and drags her to the front of the car.

“What are you...?”

Farea puts a finger in front of her mouth. Wanting to stay quiet, she touches the blood with her index and shows it to Arine.

“Did you hurt yourself?” Arine asks.

“No... I found it before Janko arrived.”

Arine shrugs. Then she crouches and looks at it in more detail. “Could be from a deer or something.”

“There’s no deer here,” Farea points out.

Arine looks up. “Oh right...” She examines the whole chassis. It is dirty, covered in leaves and dust. She brushes her finger along it and leaves a clean trail. “Can it be from a blood bag?”

“I don’t think so...” Farea glances around her and looks under the car. She only sees some electronics and more water-damaged papers. “It’s probably...”

She hears branches break. Immediately, she looks at where the noise came from. Searching in between the trees, she spots a figure running deeper into the shadows.

“Hey!”

The figure stops. Farea recognizes the shape of a man. He looks at them, frozen in place. She squints back. Tall man, wearing a white T-shirt. Farea recognizes something familiar there, but she cannot pinpoint it at the moment. She gets up and slowly starts to walk towards him. In fear, he takes off again.

“Wait!” Farea shouts, sprinting after him.

[Mars;; 11]

SUBJECT = Andrew Vancoss; ID = AV63900

Andrew enters the room, as Desmond rises from the scanner. The tall man had insisted on being the second person to see Earth again, even after Andrew had explained that the Simulation would still alter the appearance of everything.

The memory of their argument is still fresh in Andrew's mind, as is the unsettling feeling that the tall man stirs inside of him. It is true that the humans all signed up to come to Mars with the intention of never seeing Earth again, but now there is a chance for them to once again walk upon the planet they left behind—a chance to rebuild their settlement...

Perhaps even a chance to go home.

There is no doubt in his mind that there is nothing familiar to him left on Earth. When Desmond had asked, all Andrew had been able to bring to mind were sweet memories of good times with his Aunt and his Dad, both of whom have passed away.

If their house still stands unmolested, then he imagines it is filled with outdated technology, everything caked in dust and abandoned.

Yet, something about going back appeals to him inside.

Desmond looks at the man. His mouth takes on that characteristic smile that Andrew has gotten used to, but somehow it looks pinched. It fails to reach his eyes and crinkle the crows' feet that have developed there, and it does not look quite as warm and welcoming as Andrew expected it to be.

It seems that Desmond, too, remembers their little disagreement.

"Hello, Andrew!" he says, raising a hand in greeting. Andrew mimics the gesture instinctively. "I trust that you've been well."

Andrew purses his lips. The tall man sounds so... old and stuffy. *'Is that how he is going to talk to me now?'*

He supposes it is better than being ignored, though only slightly.

"I'm great." Andrew says. "Everything is... Soon we'll be able to gather materials for the ground team... We'll be that much closer to—"

"—to stability?" Desmond finishes for him. "Or to going home?"

Andrew expected him to be resistant.

"Going home isn't possible. We don't have the materials."

"We don't have the materials to stay here forever, either. Think about it, Andrew."

He is very deliberate in not thinking about it.

"Maybe a few of us—perhaps even only four or five—can get back to Earth. Don't you think that would make life up here easier for everyone else?"

The man tries to come up with an excuse, but he cannot. Fewer humans around means fewer resources demanded each sol, which means more to spread around to the humans who remain.

“You would still be taking up a sizeable amount of resources trying to build a spaceship. More than however much would be consumed by just four or five people,” Andrew says. “It’s just not feasible.”

“Ah,” he replies. “What you say is true. But that doesn’t mean it’s not feasible.”

Andrew squints at him.

“After all,” Desmond continues. “This is what our friends on Earth are for, no?”

That gives Andrew a pause.

“They are giving us supplies, are they not? We don’t have to come up with everything on our own. Some things can be…” Desmond pauses and gestures in the air a few times, grasping at the correct wording. “Found back on Earth.”

The man gives a slow nod.

“And I think it would be feasible to ask them for supplies to make a launch back to Earth possible, don’t you? After all, we’ve had the ability to print rocket parts for a while. Or, what does the woman there say? ‘Spit’?”

“If they sent us enough spit, then making the pieces ourselves would’t be a stretch. And they wouldn’t even take up that many resources.” Desmond stands in front of Andrew, blocking his way to the scanner. “What do you say, Andrew? Will you reconsider?”

The man is thinking of yellow lemon juice, flavored to be like lemonade. He vaguely remembers a sensation that was like gritty sand settling between his taste buds, releasing pure sour into his mouth and making him purse his lips.

“Yes,” his lips seem to tumble over the word, but once it is out in the open, he feels as if a weight has been lifted from his shoulders.

Desmond looks pleased. “That’s great!”

“I’ve done more than reconsider,” Andrew says. His mind is already working to figure out how he can make this work—how they might be able to get back to Earth.

[EARTH;; Check on a List]

“Cold-plate capture device,” Ben begins, glancing from boots that belong to Mollie to sneakers that belong to Will to sandals that belong to Athie to paws that belong to Bess.

“One of us might have spit up a proof-of-concept prototype at some point,” Will mutters.

“They have names, William,” Mollie growls.

“Then I guess we all decided to fuck it,” Will continues, “because water still isn’t one of their top priorities.”

“Not finished,” Athie clarifies, and Ben frowns.

“Water storage vessel.”

“One of us might have found something to use in VAB,” Will offers, as Mollie rolls her eyes at him. “Check that one off.”

Ben nods. “Plant seeds.”

“Packaged and prepared to be loaded,” Mollie declares.

Ben nods again. “Nellie-Food, plus 2 spitters to make use of it.”

“Resurrects are still gathering crap for those,” Will replies, “but one of us might be able to finish those spitters once our next batch of supplies gets dropped off.”

“Same deal with the other 6 spitters,” Athie adds. “Nellie needs more spit in order to make them.”

Ben shakes his head. “Four weeks left before our launch window closes... Not enough time for us to fall behind schedule.” He takes a deep breath, resisting an urge to tear apart his mental checklist and pull out his Rubik’s Cube. “Metals and alloys and plastics and carbon fiber.”

“Resurrects are working on it,” Will snaps.

Ben shrinks back a little.

“Give them another week or so to gather materials for us,” Mollie adds. “Athie and I just linked a last group of stragglers to QuComm this morning.”

“Nitroglycerin.”

“Yes!” Will exclaims. “We dug up one good bottle of pills in KSC Medical last night, and one of us stumbled across a fucking operational ChemE system in Cerebrum a while back, so we have nitroglycerin now!”

“Do we have enough?” Athie presses.

Will shrugs. “How much is enough?”

“Ben wants us to send 9000 tablets,” Athie utters, “divided into 45 bottles of 200.”

Will presses his lips together. “Oh... Fuck... I guess we need more nitroglycerin.”

Ben whimpers to himself. “And bye-bye blood kits?”

“Yes,” Will replies. “Those are good to go—Like I said: We raided KSC Medical last night. We got more band aids and gauze pads and antiseptic solution and other emergency response crap on hand than Mars has wounds to mend.”

“You sure about that?” Athie retorts.

Will glares at her. “Yes.”

“You better be positive.”

“I am!”

Ben huffs at them—all of them. *‘Not enough acquired.’* He slips his fingers into his pocket and presses them into his six-sided source of stress relief. “Gold Eagles.”

“Two of us fixed up some of those robotic dollies scattered all over Cerebrum,” Will mutters, “so now we have a whole fleet of remote-controlled wheels strong enough to move our rockets around.”

“One is going into Environmental Test Lab tomorrow morning,” Mollie states. “The other two are still in need of a few small repairs.”

“Fast enough to help move us around, too,” Will muses, and Ben huffs at him. However, some part of his mind seems to agree that a whole fleet of personal transports, each fast enough to keep up with their Nellie-Car in a head-to-head race across Merritt Island, would speed things up a bit.

“Payload,” Ben continues, returning his focus to his mental checklist.

“Payload adapter and payload fairings are compatible with our space vehicle designs as of right now,” Mollie explains. “Subsystems designs are being completed as we speak.”

Ben sort of nods, his entire face contorted into a dissatisfied grimace. “Close to 72 hours behind schedule.”

“Could be worse,” Will grunts.

“Could also be better,” Athie adds. “Plus we have a second payload to deal with.”

“For what?” Will scoffs. “What the fuck are a bunch of goddamned Martians going to need after we send all of this shit?”

Athie bites her lip. “They sort of want to... come back... to Earth.”

“How?”

Ben jumps, as Nellie squeezes herself into their quaint little circle and begins to search their faces for a legitimate response to her query.

“I got a better question,” Will snorts. “Why?”

“I thought our settlement on Mars was still in decent shape,” Mollie utters.

Athie gulps. “It... is.”

“We owe them a lot more than we can send on two Gold Eagles,” Mollie continues, “but we are providing them with a means to repair and even improve—”

“Why the fuck do they want to leave?” Will rejoins.

Athie shakes her head, and Will narrows his eyes.

“And what the fuck have you been telling Andrew about this place?”

“Not much,” Athie mumbles.

“Plus, those robots transmit LiDAR data and Infrared images, not video,” Nellie adds, “so no one out there would know how bad things look around here.”

Will just keeps glaring at Athie, because, sometimes, hiding the truth is almost the same as telling a lie.

“Anyway,” Athie goes on, “I was thinking that... maybe... we could design our payload capsule to be kind of like a crew module—something ten people or so could survive in during cruise or just live in like an HAEU on Mars... I came up with a few designs; I just need some help developing CAD drawings and simulation models and stuff.”

Will gapes at her. “Are you fucking serious?”

“No, Gator, just plain serious.”

Ben furrows his brow and begins to run through his calculations for total weight of their payload. “How much—?”

“Goddamn it, Fireball! How—!”

Ben clamps his hands over his ears and shouts over Will. “How much might it weigh?”

“As little as it needs to,” Athie states. “We have enough spitters on hand to have a prototype to test in a week.”

Ben shakes his head. “Too long—”

“I might be able to reprogram some of those antiques in VAB and Cerebrum to work a little faster,” Nellie offers. “Cuts spitting time down to 4 or 5 days—for all of our spit jobs, not just for this module-prototype thing.”

Ben glances over at Mollie, evading her eyes long enough to notice a nod. Then he turns back to Athie and stares at her sand-covered toes. “Okay.”

“Great!” Athie exclaims. She flicks her new leash—patchwork strand of spacesuit fabrics stitched into a loop on the one end and a harness for Bess on the other—and Bess pulls Athie on to her feet. “Nellie, um, would you mind, um—?”

“CAD drawings—Got it,” Nellie replies, and Athie grins.

“Thanks.”

“Yep,” Nellie grunts, struggling to stand up again. Ben notices that her mechanical legs are different—new—sleeker and more agile than before.

“Spitters need to be done in 6 days,” Ben states, and Nellie frowns.

“Plus, I got to test them and fix them up and retest them and re-fix them up,” Nellie mutters, rolling her eyes and following Athie out of Green Room. “Then I got to disassemble them and pack up all of their parts... Just another slew of things to check on a list!”

[earth;; Chasing]

The chase is on.

Farea sprints, trying to catch up to the man. He is quicker than she wants him to be. Very agile, good at maneuvering in tight places and, above all, dodging every obstacle he can find. She stumbles on a couple of tree roots on her way, but she always keeps an eye on him. She feels sweat come out of her forehead. She pants; she wants to rest.

'Bloody Mary,' she thinks. *'This guy is tenacious!'*

"Hey!" says Arine behind her. "Wait up!"

Farea looks back for a second. That is her mistake. She stumbles on a root and falls to the ground hard. Now her knees are scratched, and her cloths are covered in mud. *'So long to having new clothes for the next couple of days.'* But more importantly, she has lost track of the man.

"Just great..." she says, as she cleans her pants. "Just great..."

Arine, who has just stopped next to her, scouts their surroundings.

"Well... I guess there is nothing more we can do."

Farea gets up and looks around. Trees, and only trees. The sound of birds humming in the high branches makes this place eerie. Not liking it, Farea starts walking straight.

"Let's go to base," Arine says "Let's..."

Suddenly, Arine starts running towards a nearby tree. Surprised, Farea joins her and looks at the bark. Carefully grown for ages, the bark is engraved with a small V-shaped symbol. She reaches out to touch it.

"Ow..." she hears Arine say. Fareas sees Arine bring her hand to her neck.

"What's..." Farea asks.

She hears some movement. Branches cracking, water splashing. She turns around and sees nothing but trees, and only trees. Everything seems to be very calm. Extremely attentive, Farea contours the tree, looking for anything that is moving. She crouches to the ground and grabs a small stick. She would have preferred to have a hefty branch, but a stick will still help her.

"Did you hear anything?" Farea asks Arine.

Arine does not respond. Instead, she closes her eyes and faints on the ground.

"What the...?" Then Farea feels a small sting on her neck. Intuitively, she touches the spot, and she notices a small dart. She starts feeling dizzy and stumbles to the ground a few seconds later. She sees a group of people approaching, getting closer, mumbling Spanish words, before everything becomes dark.

[Mars;; 12]

SUBJECT = Andrew Vancoss; ID = AV63900

Lying back in the machine to connect to his own avatar is strange. It sends wave after wave of uncomfortable tingles up his spine until the familiar pretense of the Simulation dominates his field of view. Grey-green as far as the eye can see, walls once pure white now speckled with hardy plants. The Simulation thinks and then decides to fill the area with more plants. Andrew moves, clenching his hand and watching the fine movements of his flesh-colored fingers for a moment before moving to his feet.

He wanders around what appears to be the same derelict building Anikka had described. It looks like something from a horror show. Of course, he understands *logically* that nothing horrible and misshapen will jump out from behind a conveniently placed pile of rubble, but...

It has been so long since he has been on Earth that he is unable to say what sort of things have taken over the landscape.

Somehow he finds himself in front of a large window. He imagines that, once upon a time, it might have taken up the entirety of the wall and mostly likely showed a lovely view of the landscape beyond. Now he can hear the sound of glass crunching under his avatar's metal feet, as he looks out onto an artificial landscape generated by a computer.

And in that moment, he yearns to be able to take off the Simulation like a helmet and *see*, see the world as it is and experience the planet again. Andrew wants to take a deep breath and fill his own actual nose with the unfamiliar scents of home.

For a moment, the planet seems to want that, too.

[earth;; Arine]

Farea opens her eyes, meeting the glare of a light. Bringing her arm up, she slowly opens and closes her eyes. To her surprise, her arms are not cuffed or strapped. *'That's a good sign, isn't it?'* She feels dizzy and numb, but above all she feels dehydrated.

"*Water...*" she asks in Spanish. Immediately, someone comes with a small bowl and makes her drink water through a straw.

'That's refreshing,' she thinks.

She tries to get up, but the numbness and the weakness of her muscles make it seem like an impossible task. Not knowing what is going on in her body, she tries to move her head. Still pretty heavy, but she manages to look to her left side. She sees a woman, knotting some cloth.

"*Don't worry,*" says the woman right beside her. She is speaking in Spanish, too, but her accent is different than Farea's. Yet, somehow, it is also familiar. "*The worst has passed.*"

"*How long have I been out?'*" Farea asks the woman.

"*Two nights.*"

Not feeling very well, she tries to get up, but her body still does not seem able to help her out. Feeling very weak, Farea closes her eyes again and lets a shadow cover her thoughts.

. . . .

Farea hears a small metal pan dropping on the floor. Then she opens her eyes. To her surprise, she is able to feel all of her muscles at work. She looks at her hand and starts contracting her fingers. Oddly enough, her fingertips still feel pretty heavy. She brings herself up, as if she were ready to start the day. When she looks in front of her, she sees Arine.

"There you go, lazy girl," Arine says with a smile.

Surprised, Farea jumps backwards.

"What in the world?" she says, as she notices Arine in a new set of clothes. She looks down at herself and sees that they have given her a small red sleeveless.

"Welcome to where I grew up," Arine says, as she helps Farea to her feet.

Farea stands upright and stretches. She feels several of her joints cracking, and her muscles are loosening and stiffening all at once from all that time lying down. She looks back. The place she is standing in is quite extensive. About the size of an airplane cabin, both sides are covered in old furniture. She looks down and sees she has been sleeping on a small futon. She feels several spasms in her back, probably a response to the flat surface she has been lying on for so long.

"How long?" she says, as she rubs her eyes.

Arine never really answers her question. Instead, she takes her hand and brings Farea outside. "It's already seven in the afternoon, enjoy the sun while you can!"

At first, the light of the evening sun blinds Farea. She closes her eyes. Then she starts to open them up again by squinting towards shadowy places. After adjusting to the ambient light, she glances around. She first discovers an abandoned van, then several different old-fashioned cars.

She looks behind her and sees that she has been staying in a detachable airplane cabin. In the center of a clearing ahead, she sees a big bonfire with several people sitting next to it.

“*Hey Muchacha!*” says a familiar voice. “*I knew you knew Arine!*”

Farea looks surprised. She sees Hernan, dressed with a white V-neck and long casual pants. He is holding a half-empty beer bottle.

Immediately, she remembers the conversation she had with Hernan and Andres in the bar. ‘*Right. Both of them are from Florida and had come north looking for Arine.*’

Farea cocks her head a little. “Shouldn’t the Sembra...”

Arine shuts her mouth with her hand. She looks at Farea in the eyes, threatening her to talk as much as one more word.

“Don’t say more...”

Both of them join the bonfire. Farea counts a good ten people sitting presently. However, with all the extra space in between them, there could be more than twenty people. Farea and Arine sit next to each other, beside Hernan and an old woman.

“Mom, here’s Farea,” Arine says. “We met when we were in Washington.”

The old gramma looks at her, and starts speaking spanish. Her accent is very thick, and Farea has a hard time understanding it, even as a native Spanish speaker. After several seconds of repeating the words in her head, she understands what the old gramma is talking about. Conversations spring up elsewhere. People start laughing, passing around beer.

“*Oh, Arine is nice enough...*” she answers to Arine’s mom. “*A little bit obnoxious, but enough to bear.*”

Arine taps her on the shoulder.

“*Oh... This place has been quiet for too long,*” says one of the men sitting on the opposite side. He gets up, and raises his beer.

“*Welcome back, Arine!*” they shout, as they cheer altogether. They chug their bottles altogether. Everyone except Farea.

“*Why aren’t you celebrating?*” a woman asks Farea.

“*Well... I’m not a great fan of beer. And besides, I’m not part of this family.*”

Everyone looks at each other and bursts into laughter. Andres, who has just come out of a small van, crouches next to her.

“*Doesn’t matter. Everyone here needs to be happy, right?*”

One of the people takes out a guitar and starts stringing it. After several seconds, he begins to play a melody. In the background, electronic music starts playing, and everyone starts dancing. Everyone except Farea. But watching everyone else move to the melody is enough to make her happy. Swaying to the tune of the music, they all seem to be in good coordination with one another. She gets up and goes over to the nearest car to sit down and have a good look. People are dancing everywhere, being happy, and, above all, enjoying their time.

“*Why don’t you join?*” says the gramma, as she appears right next to Farea. “*You are young; you can do this!*”

Farea looks at her and starts feeling a little bit uncomfortable.

“Not to be rude,” she says in Spanish, “but I think I don’t belong here.”

“Why would you think something like that?” the grandma asks, shocked.

“Well... to be honest I don’t think I should be here in the first place. I just woke up, and everyone is dancing. The night is long, yes, but I feel invited yet uninvited.”

“I see. Well, let’s go a quieter place. I want to talk to you about many things.”

“What do you want to talk about?” Farea asks the grandma.

They walk behind the airplane cabin and sit down on a nearby rock.

“You have a Spanish accent. It’s rare these days to hear something like that.”

“Everyone has their own ways of speaking...”

“When I was your age, everyone wanted to speak with a Spanish accent.”

“It’s nothing special.”

“Ah... Then what is special?” the grandmother asks.

That is a very good question. Farea has never thought about describing what special means.

“For me,” she says carefully, “special is having something that other people don’t have.”

The grandma is looking up at the darkening sky. The bonfire emits enough light for Farea to see the wrinkles on her face. Her forehead creased with lines, her cheeks starting to lump down. The grandma’s eyes, dark as the night, gaze at the stars.

“You are just like my husband. He was a good man with many different faces. He spoke a lot of languages, but he always spoke the truth.”

“I’m glad there are people who are like me,” Farea says sincerely.

A moment of silence.

“My husband died two years ago,” the grandma says with a touch of sorrow in her voice. She sniffs a little bit but manages to bring back her composure.

Two years ago. Farea remembers her conversation with Andres.

She left with her friend after her father was killed.

“I’m sorry for your loss,” Farea murmurs.

“Don’t be. Thank you for taking care of my baby, Arine.”

Farea, surprised, turns her head towards the grandma and meets her eyes.

“I haven’t done anything,” Farea says. “Rather, she saved me from death.” She turns her head, looking at the flickering light of the fire. The music, still blasting, has changed into hits from an earlier 2010s. She remembers some of the lyrics and starts chanting to a song.

“That saved her.”

Farea looks at the grandma again.

The old woman gets up and motions her hand. *“Arine couldn’t save her dad when she had the chance. She went out the day after, going after them... Sembradores...”*

Farea starts. *“Sembradores?”*

The grandmother nods gravely.

“But... Arine... is...” Farea whispers, shocked.

“Because the only people who can defeat Sembradores are other Sembradores,” the grandma states, her eyes cold and hard like stones. Then she shakes her head a little and forces a smile. *“I talked to her, and she was so happy that she saved you.”*

“But I’m nobody. I’m just someone without anything special, without a home...”

The grandma rests a hand on her shoulder and smiles for real this time.

“My daughter. Everyone is special, just not everybody knows what they are meant for. You will figure it out. Why you are special.”

“That’s easy to say when you are this old,” Farea protests. *“I’m young, no purpose, no home, nothing.”*

“Do you have parents?” the grandma asks.

“Yes, both of whom are living in northern territories.”

The grandma looks a little bit confused. *“Then why do you say you are not special?”*

“Because they aren’t from there. They’ve been forced to live there ever since the Collapse, because it’s too dangerous for them to relocate now. If they could, they would be living in a different country. And I’m just a lousy person without a well-defined heritage. I’m screwed up.”

The grandma sits down, legs crossed. She carefully takes her time to think about the best words to use.

Emotions start accumulating, eventually making Farea burst into tears.

“Hey... Hey... Calm down...”

Sniff.

“Is that...” Farea stutters. *“Look at all of you. Despite the hardships, despite everything, you all have a place to go. Me, on the other hand, I don’t. When I go to where my parents live, I have a feeling that I am alone. You are lucky to have something called home.”*

The grandmother looks at her one last time and gets up. She asks Farea to get up as well. As she stands, Farea receives a hug from the grandmother. The hug lasts a long time. Enough for Farea to feel comfortable, enough for her tears to dry out.

“My child. Doesn’t matter where you are from. We are just here to survive.”

They detach from one another. Farea looks a down, containing her tears.

“Whether you are from here or there, we are all a big family.”

Farea clears her nostrils. She smiles and looks at her.

“Thank you...”

“No need to,” she puts a hand on her shoulder. *“If you need anything, you can always feel welcome here. Just find the trees.”* The grandma drags Farea out of the shadows and into the brightness. *“Enjoy the night. You have a home here.”*

[EARTH;; Better than Blackness]

Waiting...

Because there is nothing left for her to do now.

“I wish Bess were here right now,” Athie mumbles. “She would have dragged me off on some useless adventure... and I would have enjoyed it.”

“You got to quit talking to yourself, Fireball,” Will mutters. “You’re starting to sound like Gunflinger, and it’s creeping me out.”

Athie makes a face in his direction. “Then give me a job to do.”

Will snorts. “See that big-ass box over there?”

Athie crosses her arms and glares at him.

“Oh... right... You can’t see.”

She hears him stand up and stalk across Cortex—main testing floor of Cerebrum—two flights of stairs below ground, best described to her by Mollie as a massive lab with high ceilings and glass walls and piezoelectric floors, free of I-beams and other obstacles and filled with old prototypes of robots, dwelling modules, and satellites that should have been sent to Mars in 2046 or 2048 or 2050.

“Bess can,” Athie retorts, resting her chin in her palms.

“Where the fuck is Bess?”

Athie shrugs.

“With Jack,” Nellie utters all of a sudden, and Athie glances over at a two-door entrance behind her.

“And where the fuck is Jack?”

Athie hears Nellie take a few strides into Cortex.

“With Bess.”

Athie imagines that Will is now glowering at Nellie—maybe even flipping her off—and she begins to wonder how Nellie is going to react... She has never seen the girl before, after all.

“Mollie sent him over to someplace called Kennedy Uplink Station¹⁷⁰ to get a bunch of radar antennas back online,” Nellie replies. “I lent him my vehicle so that he could power up those computers and keep all that stuff from Helga on hand, just in case he needs a whole new dish or a few parts or some—”

“Fuck that!” Will interjects, his fury radiating throughout Cortex like heat from a wildfire. Athie almost nods in agreement.

“Well, he’s been working on something else, too, and he wanted to bring his workshop with him,” Nellie offers. “Okay?”

“How the fuck does he have time—?”

“Okay,” Nellie mutters, marching over to Athie and grasping her forearm. Then Nellie gives Athie a tug towards that entrance. “Later, Gator.”

“Hey!” Will snaps. “Where the fuck are you—?”

¹⁷⁰ (Granath, 2015)

“Athie has someplace better to be right now!” Nellie shouts over her shoulder, as she tows Athie out of Cortex and veers towards the main entrance of Cerebrum. “And so do I.”

Athie tries to shake Nellie off again and again, but her forearm seems to be trapped in a hot iron shackle. Her efforts soon prove futile, and she obliges herself to relent.

“So,” Athie begins after a beat of disgruntled silence. “Where are we going?”

“KSC Medical,” Nellie states. “Jack has a... gift... for you.”

Athie furrows her brow and feels her stomach lurch with fright. “What do you mean?”

Nellie pauses for a moment. “You know how he makes me legs?”

Athie shakes her head. *‘But, now that I think of it, her steps do sound a little different... a bit softer and more even.’*

“Well, he made you eyes,” Nellie finishes.

Athie blinks. “Eyes.”

“Bionics—camera¹⁷¹ and a couple different microprocessors to handle image data, and an implant to stimulate some part of your brain—occipital lobe—I think... Jack knows how to make them work.”

Athie gapes at Nellie. “Is he planning to... *operate*... on me?!”

“Yep—but you’re going to be awake for it because, according to Jack, at least, that’s sort of a thing during brain surgery.”

Athie stops dead, ripping her forearm away from Nellie and staggering back. “No. Flipping. Way.”

Nellie huffs and mutters something under her breath. “I told him this would happen.”

“No way!” Athie shrieks, all of a sudden quivering and short of breath. Her pulse is so loud, so unsteady, so fast. “He can’t—here—now—! That’s insane—I won’t—!”

“Just—Stop!” Nellie barks, her voice shaking with a sort of anger. “Jack can do this—here—now—and, on that point, Mollie agrees with me.”

Athie gapes. “*Mollie?*”

“Yep,” Nellie replies. “Mollie expects you—”

“NO FLIPPING WAY!” Athie explodes, trembling more with rage than with fear now. She almost feels betrayed. *‘How dare she just give her consent! Because I sure as science don’t to give mine, and, apparently, I’m supposed to be the one who’s getting the flipping operation!’*

“She’s going to be with us in KSC Medical throughout your entire surgery,” Nellie utters, her tone a bit softer now.

Athie shakes her head, still gulping for breath.

“And,” Nellie continues, lowering her voice a little more, “keep in mind that all of this is coming from someone who was alone and unconscious when complete-stranger Jack came along and chopped off her real-people legs, then replaced them with a make-do pair of metal-and-plastic ones... inside of a vehicle... with no anesthesia and none of this high-tech medical stuff that he has access to here.”

¹⁷¹ (Peng, et al., 2013)

Athie is silent, contemplative, after a while almost more accepting. She relaxes her shoulders a little. Then she feels Nellie's fingers close back around her forearm, and she allows herself to be guided out to KSC Medical.

"Oh, good."

She hears a door thud shut—vehicle door—as Bess greets her with a curt woof, and Jack continues to talk.

"OR is good to go—sterile from ceiling to floor. Mollie and I dug up a bunch of scrubs for all of us to wear, and I found a great local anesthetic. I got a ton of bio monitors up and running, and I rigged up a ventilator, just in case something happens. Operation is simple—one incision through the posterior cranium into the occipital lobe. Implanted device is about the size of a thumbprint. So... um... just let us know when you want to get started."

Athie shakes her head. *'Never—I can handle being blind and useless.'*

"Relax," Jack utters, his touch as soft and calm and soothing as his voice. "You're going to be fine—I've done operations just like this one before, and I've seen a lot of much weaker and less willing patients recover from them. You're going to be just fine."

Athie takes a deep breath and squeezes her eyes shut. "This better work."

"It will," Nellie states. Then she and Jack lead Athie inside.

The operating table is cold and hard, just like that buzz-cut razor against her scalp and all of those electrodes on her back and chest, but Jack's hands are warm and comforting, even as they inject another shot of anesthesia and begin to carve open her head.

"How are you doing?" Mollie asks, as her latex-shielded fingers grasp Athie's hands.

"Okay, I guess," Athie utters. She grimaces a little at her tone—not at all convincing.

"Okie... um... After... Once Jack gets this device calibrated and patches you up, which subsystems do you want to work on in addition to the crew module?"

Athie blinks. "Which subsystems still need to be worked on?"

"All of them," Mollie admits, "especially those dealing with communications and power."

"Oh... Wow... In that case, communications and power," Athie replies. "I thought we were only about four days behind—Andrew still thinks all of us are on schedule."

"We are a little further behind than we ought to be," Mollie mumbles. Then she squeezes Athie's hands. "But, now that you are going to be able to see again in a few hours, we can catch back up before time comes for ATLO."

Athie tries to smile. *'This better work.'*

"You have a favorite story?" Jack inquires, as conversation stalls.

"Yes," Athie utters, remembering that ink-on-paper keepsake of hers—stolen from a library out in Colorado after Mollie had taught her enough about words for her to want to read on her own, now drowned-dead along with Helga a few miles south of here off I-95.

"Long one?"

Athie contemplates its thickness—impossible to for her to forget after rereading that book so many times... *'Not War and Peace, but not a USA Today article either.'* She reminds herself not to nod. "Yes."

“Tell it to us,” Jack suggests, and Athie cannot help but grin.

“*The Hobbit... or There and Back Again...*”

Athie had once made a point of memorizing it, just in case, because the binding had begun to fall apart, a few of the pages had detached, the paper had become yellow and frail, and the ink had started to fade in a few places... She remembers challenging Ben to a race back then. He had memorized everything first, of course, front cover to back cover, but she had always told the story best.

Jack interrupts her once—after her voice guides Bard’s arrow past Smaug’s armor—to ask her a question, and, all of a sudden, she loses her train of thought.

“Wait a second—What?”

“What do you see?” Jack repeats.

Athie blinks... Grey, not blackness, pixelated outline of a sort of sphere—a face... “What am I supposed to see?”

“Not telling you until you tell me,” Jack states.

Athie attempts to nod. “Fair enough,” she mutters, concentrating on that blur of black and white before her—behind her—wherever those cameras happen to be right now. “I see... Mollie... I see Mollie.” Then it hits her. “I *see* Mollie!”

“Describe her,” Jack presses, a hint of that same excitement in his voice.

“Greyish... figure—head and neck and shoulders—against a lighter background... Two darkish spots where her eyes should be... some shadows sort of outlining her nose and chin...”

“I might be able to...” Jack murmurs. “Should enhance resolution.”

Black—blind. But then she can see again, and she can distinguish eyebrows and lips. “Woah...”

“What do you see?”

Athie grins even wider. “Enough.”

She sees Mollie nod to someone. Then something almost seems to close over those cameras, and she is back to blind. She feels two warm hands slide something cool and metallic over her eyes and around her ears. She hears a soft whisper—mechanical—along with a series of snaps and clicks.

“That should do it,” Jack utters, returning her cameras to life.

Athie blinks a few times—pointless gesture now—and studies those two strangers standing before her: Nellie—darkish bob and tired eyes over a flat chest and an emaciated waist—young, sort of like Ben, yet aged—pretty in spite of her scrubs and dark circles and distrusting eyes, but painful to look at... Jack—pale overgrown crew cut poking out in a hundred directions and grinning lips over broad shoulders and muscular arms—also young, but, unlike Nellie, radiating a youthful sort of strength—likable even though his scrubs are spattered with dark splotches of her own blood.

“Better?” he asks.

Athie nods. “Much better than blackness.”

“Good enough for you to assemble circuit boards and antenna arrays and redesign that crew module?” Mollie quizzes.

Athie nods again. “Should be.”

“Excellent,” Mollie replies. “We can afford to give you about forty-eight hours to recover from this. Then we need you to get to work. We have less than three weeks to go until our launch window closes, and Benjamin wants to start the Countdown for our first launch in about a hundred hours—”

“Just four days from now?” Nellie inquires.

“Which gives us two weeks to finish everything,” Mollie continues.

“Shit,” Nellie mutters, exchanging a loaded sort of look with Jack. “So... can we afford to spend another few minutes here to hear the rest of *The Hobbit*... or do we need to get back to business?”

Mollie smiles. “You have to hear the ending... But I am going to help William and Benjamin take inventory of new supplies, because our Resurrects ought to be returning soon.”

[earth;; A Gunshot]

The sound of people clapping wakes Farea from another pleasant dream. A couple of days have passed since the small party with everyone, but these days have been very relaxing. There have been no Sembradores, no weapons. Just people talking in Spanish to one another and helping out with some small tasks here and there.

For the first time in a long time, Farea feels relaxed. Away from violence, away from misery... Those were the events she has had to face every day.

Not anymore.

"Thanks, Tiana," she hears old gramma Juana say outside. *"I love your drawing. It's marvelous!"*

Smiling, Farea gets up and comes out of the old airplane cabin she has been sleeping in. The sunlight is warm, heating up her cold skin. She closes her eyes and slowly opens them up again to allow her pupils to adjust to the sudden brightness. She sees several people sitting in a circle; little Tiana is smiling in the center, holding a drawing of a horse with different people beside it. Nine years of age, short brown hair going down her shoulders, and a small pink dress covering her light-brown skin—Farea thinks she looks adorable.

Tiana takes a seat near Paulo, her father.

"My daughter..." he says with both pride and pleasure in his voice, as he opens his arms. *"I'm so proud of you."*

Tiana gives her dad a big hug and crawls into his lap. She turns to Farea. *"Hi, Fa!"* she says with a big smile. *"I drew a small horse!"*

"Ah, very nice," Farea replies, as she looks at the picture in closer detail. Made out of crayons, Tiana has given it a nice artistic touch. *"Do you like drawing?"*

Tiana turns around, a little bit shy.

"I do... But I want to paint... Last year, my dad found a big bottle of paint, and we colored the small van over there," she explains, pointing at an unused blue van. *"I love painting."*

"Shhh..." Paulo says, placing a finger over her mouth. *"It's time for Domingo's performance."*

Farea turns towards the center of the circle. Right across from her, she sees Arine talking to old gramma Juana. Sitting next to them is a boy, around thirteen years of age. He reaches behind him, picks up a small case, and walks to the center. After carefully placing the case on the ground, he opens it. Farea glimpses a few shiny metal pieces inside before he takes them out, one by one, and combines them together, forming a trumpet.

"So, today," he begins, *"I wanted to play a classic song. It comes from a movie about stars, wars, galaxies..."*

He starts playing—a classic among all movies ever made. Farea closes her eyes and can picture the bright yellow text scrolling into the sky. Bringing more old memories from her childhood to mind, she recalls how much she has always loved watching action and adventure movies, despite knowing that, before the Collapse, productions that should have needed a lot of

human actors were replacing most people with CGIs. Farea keep her eyes closed, enjoying the sound. When the song ends, everyone gets up and applauds. The boy, excited by his achievement, blows the trumpet so hard that it makes a squeaking sound. Farea covers her ears as a reflex.

“Sorry,” the boy says innocently. He starts dismantling the trumpet then walks back to his place, where he is greeted by both Juana and Arine. Then he sits down.

“*The kid doesn’t have parents?*” Farea asks Paulo. “*I would have been proud of him.*”

“*Domingo? Both of his parents died long before he could remember. Juana has been taking care of him.*”

Farea looks at Domingo and smiles at him. He glances up and smiles back. She sees a small necklace hanging below his chin. She instinctively tries to touch her own necklace, forgetting for a moment that she has left it in the airplane cabin.

“*Please excuse me,*” Fara gets up, “*I’ll be right back.*”

As Farea walks away, people are getting excited for the boy’s next performance. She hears cheers and applauses coming from the circumference of the circle. Not wanting to look behind, she stops and stretches her back. Her muscles still seem to be getting ready for the day. She yawns and goes in the cabin.

Her clothes are scattered all over the floor, so she takes a good five minutes searching through them to find her necklace. She tries in vain to remember what she wore yesterday.

“Where could I have put it...?” she says, as she caresses her neck. She closes her eyes and suddenly remembers that she left it next to Arine’s bed last night.

“*We need to go back Farea...*” Arine says, looking at Farea with serious eyes.

“*Why? We are safe here, no worries!*” Farea exclaims, wanting to spread her smile across Arine’s somber face.

“*It’s not safe for us to be here. Sooner or later, Sembradores will find this place, and everyone here...*”

Farea blinks, as Arine shuts her eyes and hangs her head.

“*Aren’t they safe because you are with them?*”

Arine looks up, her entire expression suddenly as dark as death. “We deserted, you know?”

“Hey!” Arine says, as she stands right in front of the cabin door. “Looking for this?” She is holding Farea’s necklace with her index finger.

Farea walks to her, takes it, and clips it around her neck.

“Why do you have it?” Farea asks.

“Last night, you gave it to me after you took it off because you knew you were going to lose it.”

Farea admits that she does have those kinds of tendencies. She shakes her head, wanting to leave the cabin.

“Not so fast,” Arine tells her. “We seriously need to leave.”

“Can’t we stay just another hour?”

“No,” Arine snaps. “It’s already been three days. We’re lucky they haven’t found us and killed everyone at this point.”

“They are fine; they will think we were eaten by crocs or something.”

“Alligators. But, seriously, pack your stuff. We need to go.”

Not wanting to do anything of the sort, Farea tries to deny those words as much as she can. But deep down, she knows that Arine is right. They cannot risk anything more.

“Give me five minutes,” Farea says, as she opens a small bag. “I’ll be there.”

. . . .

They say their goodbyes. The young ones, especially Tiana, look sad.

“*When will I speak to you again?*” the little girl asks. “*I love your accent.*”

“*Awww.*” Farea crouches and hugs Tiana. “*I’ll come back and teach you someday. I promise.*”

Tiana tears up a little bit.

“*Be strong.*” Farea stands up and thanks everyone for their kindness and support. As Farea starts walking away, she can hear Arine having a few last words with her family. She remembers the last time she talked to her own parents... It is always difficult to say goodbye, because parents are always so worried about what might happen to their children. But these are their duties: Parents have to love and care, and children have to fly out of the nest.

Arine kisses her mom and joins Farea. Once they start walking towards the woods, they do not look back.

“How do we know where to go from here?” Farea asks after ten minutes.

“We go East and then find our way North. Don’t you remember the rendezvous point? Merritt National Wildlife Refuge Beach?”

Suddenly, Farea hears an unnatural sound. She freezes and looks around. Not knowing what it is or what is making it, she scans her surroundings more closely. After another minute, she can still hear it, but it is too faint to recognize now.

“What’s wrong?” Arine asks.

“There’s something...” Suddenly, a different sound is getting louder and louder. Farea hears voices—human voices.

“Quick,” she says, as she points out a big fallen trunk. “Over there.”

Farea and Arine scramble behind the trunk. Both of them take off their backpacks and press their bodies flat against the ground.

“What in the world?” Arine asks.

“Shhhh!” Farea hisses while motioning silence. She hears footsteps getting closer and closer. Clomping boots, clanking canteens, someone clicking loaded magazine clips into guns. The voices belong to a mix of males and females.

“I can’t believe they sent us off,” a man says. “To think we drove all the way down here just to get sent off!”

Arine looks at Farea and motions her lips. Farea can tell what she is saying: *Be patient.*

“Another three days spent searching for more missing members,” a different man says. “But, hey, at least we had some fun putting fire to that camp along the way!”

“Those poor children, though,” a woman says, disapproving of the man’s assessment of the deed. “I hope he doesn’t do anything awful to them.”

“Boss? Nah, he wouldn’t do that. Besides, he was sent off, too, just like the others.”

“I gotta wonder who this commander thinks he is,” a different woman scoffs. “He was so rude! Fucking...” She snaps her fingers. “Do you remember his name?”

“I call him Lucius!” says another man. His voice is mocking and loud, and his words make someone snicker. “Just goes so well with his character.”

“Oh, come on,” someone else retorts. The voice starts to fade, as the group gets further and further away. “Would he even be offended?”

“Well,” a person asks, “isn’t that what ‘L’ stands for?”

Immediately, Arine opens her eyes in shock. She looks up at them for a moment then hides again. She starts panting. She becomes unsteady.

“No... No...”

Both Farea and Arine slowly and silently get up. The group is still only a couple of hundred feet away, not far enough for Farea and Arine to make sudden movements. Farea hears a small bird chirping in the woods, and she glances up. Then she hears a small whoosh behind her. Startled, Farea whirls around and sees Arine sprinting back towards her home.

“God dammit!” Farea exclaims, as she throws on her backpack. She looks at the ground and sees Arine’s backpack. “This can’t be...” She picks it up in a hurry and chases after Arine.

Machine gun blasts and panicked shrieks begin to echo through the trees, and Farea picks up her pace. Fear pulses through her veins like ice water, making her sweat and shiver all at once. Names and faces flash behind her eyes: Hernan, Andres, Juana, Tiana... She cannot bear the thought of watching them all die.

Farea hears a drone buzzing somewhere above and shields her head, hoping the sensors on the bottom of the machine do not see her. Her throat is burning, and her legs ache with exhaustion, but she presses on. She has to help them before it is too late.

After several minutes of sprinting, ducking, and sneaking around, she finally arrives to the airplane cabin. Smoke billows up all around her, and flames crackle close by. She drops both backpacks on the ground and covers her mouth with her sleeve, crouching behind the cabin and listening to the commotion happening on the other side.

“So...” she immediately recognizes L’s voice. “This is how it ends.”

She hears Arine sobbing.

“There’s nothing more to do,” Arine tells him. “I swear!”

Farea is tempted to peek, but she does not want to be seen. She can almost picture what is going on. Arine is standing strong and tall, perhaps with her mom at her side, and she is going to be part of the massacre. Farea does not know how many people have died already, but she can feel that things are different here. The atmosphere is strained and heavy, no longer free of worries or

alive with music and dancing. Only two people are talking, neither one in Spanish. Between breaths, there is only silence. Not a single sound above the hushed snapping of the fire. Not even a bird.

“Traitor,” L says with indifference.

BANG!

Farea hears a body hit the ground. Her mind goes blank, thinking the worst.

‘No...’

Suddenly, she is petrified and shivering all at once, too overwhelmed with emotions to either think or move. Fear, distress, guiltiness. She does not know what to do.

Then she hears a crunch of leaves, as someone steps towards her, and instinct forces her to get up and start running as far and fast as she can.

‘It’s my fault,’ she thinks, sobbing in spite of her inability to breathe. *‘It’s all my fault.’*

[EARTH;; What If All Goes Well?]

Ten days to go¹⁷², and the first Countdown begins.

“Hey, Mollie, can you spare a minute?”

‘No,’ Mollie thinks, glancing down from her perch on their launch pad at a sun-bathed, speck-like version of William.

“What for?” she shouts back, returning her attention to their Gold Eagle, inspecting its payload adapter from yet another angle in order to determine whether or not the new crew module design is going to be compatible with it.

“Jack found another shipment of those prenatal care things,” William replies, “and Ben wants to know what the fuck to do with all of them.”

Mollie glances down at her measurement multi-tool¹⁷³—digital laser device that functions as tape measure, level, plumb line, and surface defect sensor all at once—product of Athie’s mind and Nellie’s prowess with CAD and spitters. She makes a note of these new numbers on a notepad—wonderful little handheld device—classic, like a 2025 smartphone on electronic steroids—one of a thousand other good, old tools still buried in the depths of Cerebrum after KSC was abandoned back in 2045 like a beach house during a hurricane.

Then she faces William again. “Leave them be for now. Our second launch is just supposed to provide all of our people on Mars with a means to come home.”

“Ben disagrees,” William calls, and Mollie sighs.

“I can talk to him... Just... Tell him to give me ten more minutes up here.”

William nods and strides away, as Mollie relocates her measurement multi-tool once again and continues to collect data. She almost has enough to come to a definite conclusion now.

“Benjamin can double check my calculations,” she mutters, noting these numbers alongside the others. Then she stuffs her notepad into her front left pocket, clips her multi-tool to her right-side belt loops, and marches towards a sagging set of steep stairs that still zigzags all the way down to the ground from the top of their launch pad.

She finds Benjamin curled up in a rocking ball outside of Cerebrum, shielding his sunburnt nose from a high-noon sun, fumbling with his Rubik’s Cube until all six of its sides are solved... again.

“Mollie is right here,” she murmurs, lowering herself on to a busted up paver beside him.

“Left here,” he mumbles back.

Mollie remains silent for a moment, watching his fingers snap rows and columns of color around his Cube. “What are you thinking about?”

Benjamin shakes his head. “One-way, Mollie.”

Mollie furrows her brow.

“All of them volunteered for a one-way trip out to Mars,” Benjamin states, messing up his Rubik’s Cube... again. “First Mars never intended to bring them back to Earth.”

¹⁷² (Doody & Stephan, Chapter 14. Launch Phase, 2015)

¹⁷³ (Vinoy, Ananthasuresh, Pratap, & Krupanidhi, 2014)

“First Mars is not here to make that decision now,” Mollie replies.

Benjamin pauses, allowing his fingers to freeze and his wrists to droop. Then he levels his gaze with the horizon. “We are First Mars.”

Mollie closes her eyes. “Yes... But we are going to bring them home.”

“What if something goes wrong?” Benjamin whispers.

“What if everything goes right?” Mollie replies.

Benjamin shakes his head again. “Then all of them get here and have to survive like us.”

.

T minus four days.

Mollie purses her lips, pulling up a new set of shaker table and thermal-vacuum chamber test results on Casper. This crew module prototype seems good to go, along with just about everything else getting launched in their first payload.

“Sixty-nine hours left to load it up and integrate it,” Benjamin reminds her, poking his head into Environmental Test Lab. “Then twenty-four hours to fuel all three stages of our Gold Eagle, power up our space vehicle subsystems, load all types of software into its central computer, plus configure everything for launch. No time to make this crew module better now.”

“Oh, come on, Ben,” Athie huffs, peering over his shoulder. “According to these new results, our current design is good enough!”

Benjamin presses his lips together and stares down at his red rubber rain boots.

“Did William fix up that crane?” Mollie inquires.

Benjamin nods at the floor. “Nellie and Jack are setting up our launch vehicle adapter and payload fairing in Clean Room now.”

“Excellent,” Mollie exclaims, stepping away from Casper. “Where did those robotic dollies go? We need to get this crew module over to Clean Room!”

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T minus ninety-one hours.

Mollie cannot help but smile, as Athie and William and a slew of robotic lifts and bolsters hoist up their space vehicle—crew module vast enough to transport ten people and light enough to be packed tight with spitters, spit powders, nitroglycerin tablets, and first aid kits and not exceed its weight constraints, modified to support solar sails, Ku-band communications, pyros, and ion-electric propulsion engines¹⁷⁴. She and Benjamin have taken charge of those robots, Mollie on the orchestration of maneuvers and the hand-held remote units, Benjamin on the command line controls. Together, all four of them manage to secure their space vehicle to their launch vehicle adapter and encapsulate it with their payload fairing¹⁷⁵. Then Mollie summons a long rectangle of

¹⁷⁴ (Doody & Stephan, Chapter 11. Typical Onboard Systems, 2015)

¹⁷⁵ (Doody & Stephan, Chapter 14. Launch Phase, 2015)

robotic dollies into Clean Room, and Benjamin directs all of those other robots now cradling their launch vehicle to adjust its orientation before lowering it on to that line of waiting wheels.

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T minus eighty-six hours, and their space vehicle is hooked up to that crane, prepared to be hoisted on to their Gold Eagle.

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T minus eighty-four hours, and Mollie is ordering Benjamin and Nellie to follow Athie and William and Jack's example and head into Cerebrum to take a very-much-needed nap.

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T minus seventy-two hours, and the second Countdown begins.

All six of them are back on their feet, scurrying around KSC like mice before an imminent dawn of a frigid winter, collecting instrument covers and a slew of other 'remove before flight' articles, installing various arming plugs, running through an endless series of last-minute tests and retests, as sunlight wanes and waxes and wanes and waxes again.

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T minus twenty-six hours, and Benjamin directs William to begin fueling their Gold Eagle. Mollie collapses against the base of their launch pad for a moment, breathless and famished and exhausted.

Then all of them get here and have to survive like us.

She buries her face in her hands and suppresses and urge to sob.

"You doing alright?"

She feels a hand—warm and gentle—land on her shoulder, and she jumps.

"Oh! Jack... I..." she stammers.

He seats himself down beside her and offers her a hesitant yet understanding, almost encouraging, sort of grin. "Nervous about it?"

Mollie closes her eyes. "I just... Benjamin..." She shakes her head and sighs. "What if all goes well?"

"Isn't that what we want to happen?" Jack inquires.

Mollie nods then shakes her head then nods again. "We want liftoff, and we want this payload to make it to Mars... but..."

Jack meets her weary gaze with two wide and expectant green eyes, and Mollie feels her breath catch in her throat.

“Benjamin seems to believe that First Mars was beginning to think all of our people out there would be better off on Mars than back here on Earth,” she whispers. “If he is right... he never is wrong... then are we right to send them all of this?”

“Mollie, they need all of this just to survive,” Jack replies, grasping her hand and glancing up at their launch vehicle. “We got a short term solution here. We can rethink our second launch later.”

Mollie nods. “Okie.”

“Go get some sleep,” he suggests, as he pulls her back on to her feet.

“Soon,” Mollie agrees. “First we have to pick up our launch-comm units from Athie in LCC and run through a practice poll.”

[EARTH;; Never Swear Never]

“Nell!”

Jack’s voice—muffled—because of frost-coated North Carolina Appalachian Trail foliage. This place is still sort of stunning in spite of all those starved-thin and pollution-poisoned corpses—birds of prey and white-tailed deer and Valiants and Cowerers alike, all decomposing into dirt and bone on either side of each ice-hard hiking path.

“Come here! You got to see this!”

A whisper.

Her own motorized legs—new—still too strange and awkward to be efficient, but too sleek and powerful to be frustrating like those other things. There is a hushed mechanical whirring in them, as she maneuvers around a patch of ice and fallen leaves. She thinks of a landing as soft as Jack’s voice, and her legs acquiesce⁵⁶—amazing...

“Shhh...”

His eyes, bright as sunlight on a crisp and clear winter day, meet hers. His nose and his cheeks are as pink as rosebuds in spring; his teeth, somehow still white as snow, are peeking out through his exhilarated grin. His hand is beckoning her closer—quieter—closer again...

A tangle of twigs and grass, a puff of feathers, a little yellow beak. Then a rustle of wings, and two more little beaks, and a gasp of... delight.

“Three of them?”

No sound. Just her own shivering lips struggling to form those three words.

Jack smiles even wider, and she sort of smiles back, her insides all of a sudden warm enough to melt.

A flutter above them. Then a chorus of famished peeping, and Jack vanishes behind a tree trunk, as mother bird swoops down to her babies with a tangle of worm writhing around in her beak.

Her own neck cranes towards their nest—

“Perfect timing.”

Jack—right there beside her—his glittering emerald eyes close enough to thaw her out from head to toe.

He gives her this funny looking grin. Then his lips sort of bump into hers.

Nellie jumps back, stumbling on legs that are all too prepared to catch her, and claps a hand across her mouth, gawking at him.

His face is redder than rose in summer and every bit as awestruck-sheepish as she feels.

A giggle—her giggle—his giggle.

And, all of a sudden, both of them are laughing hard enough to frighten mother bird off.

“Let’s try that again.”

Her own voice, her words still sort of shaking with laughter—something she never would have wanted to do ever again... something she feels a sort of need to do for Jack...

Nellie opens her eyes and jumps out of her seat, that same sort of first-kiss excitement pulsing through her vessels; even her new bionics seem a little jittery. She pats her holsters—all armed—and pops a night-vision lens on to each of her eyeballs—almost starting to get light out but too dark right now to feel safe without them. Then she glances at her timepiece, which is still hanging from her rearview mirror.

Seven hours and forty-eight minutes left until launch.

Something within her seems to start hopping up and down like Bess does a moment before her mealtime, after that scent of what she has learned to consider food has hit her nose, and Nellie succumbs to an urge to smile.

“We’re sending a spaceship to Mars today!” she whispers, snatching up her earpiece and engine monitor from atop her dashboard—gifts to her from Mollie and Ben at T minus twenty-two hours (before Mollie ordered all of them to take a break and attempt to get a little sleep) so that she would be able to update everyone else on conditions of their fuel tanks and their boosters from now until her engine monitor lost its signal from their rocket a few seconds after liftoff. She fiddles with her earpiece output volume for a bit until she hears a quiet chorus of snoring and slow breathing.

“One of those STEM-Heads has to be awake now,” she mutters under her breath, flicking off her own mic and furrowing her brow at that utter lack of voices now coursing into her ear, “because all four of them still care about this whole Mars thing a heck of a lot more than I do.”

She checks her timepiece again.

“I said distal...”

Nellie freezes, glancing over at Jack.

“The fracture extends from the point of impact towards the distal end of the humerus.”

She stifles a giggle, as his head droops on to his chest, and his doctor jargon tumbles into a soft snore—adorable as ever.

“Meet me at our launch pad,” she murmurs, allowing her lips to tickle his ear.

His eyelids sort of flutter in response.

Nellie straps her two favorite sniper rifles in an X across her chest, pops a tooth-wash chew (best thing she has ever scored in a jacked-out-of-stock warehouse) into her mouth, and slips outside. Her first step is still a little shaky. These new bionics are such a huge stride forward from that ancient abomination she jacked from Boston that she almost does not know how to stand up with them, let alone walk.

“You’re good, Jack,” Nellie states, wobbling towards their rocket. “You’re too good.”

Another few strides, and her brain is almost calibrated with them enough to run, so she breaks into a light jog. Then she spots one of those Resurrects, and something compels her to greet it with a goofy-looking face, as she passes by. Those things still scare her more than half to death, maybe because they almost look human, maybe because Ben programmed them to act more hot-blooded-animal than she even knows how to be, maybe because their sniper rifles still happen to be a heck of a lot more lethal than anything she has on her right now... Her mistake.

“I can spit up something even better for myself in less than an hour,” Nellie mutters. “I just... haven’t... yet.”

She shakes another nightmarish musing out of her mind and quickens her pace.

“Looks sort of like a tower for a dragon to lock up its princesses in,” she states aloud, planting her feet in one place and staring up at their rocket, her neck craned as far back as she can get it to go, her cheeks still caught in a smile up to her ears, her eyes sort of squinting through her night-vision lenses at that long obelisk of steel structure looming up beside their magnum opus, all cloaked in pre-sunrise blackness. “Bet all of us could live in it for a full decade and never need to leave—unless Bess needs more space to do her business... Maybe we should keep it, that way all of us can be sure nothing goes to waste.”

She feels her smile sort of slip away.

Leeches.

“Last time I met a bunch of them,” she mumbles, kicking at a pebble, “I almost shot one dead over a damned box of metal powders... because I figured that she might waste them on some sort of space shit before she put them to good use... Now look at me: Leech just like them.”

She looks up at their rocket, now as much a part of her and Jack as it is a part of Mollie and Athie and Ben and Will, with a pathetic sort of pleading in her eyes. “Get to Mars.”

“I think we have to wait for Ben to launch it first.”

Nellie whirls around, her heart all of a sudden pounding hard enough to make her cheeks flush, as Jack stifles a yawn and shuffles a few steps closer to her, one eyelid still more closed than open.

“I think it goes at zero no matter what¹⁷⁶,” she replies, slipping her arms around him and pressing her forehead into his chest. His t-shirt is soft against her skin, and it smells like sea salt, because their clothes get washed in the Atlantic and set out to dry on the beaches of Merritt Island.

She feels his hands chase a tingle up and down her spine, and she shakes off a shiver.

“Are we doing the right thing?” she mumbles.

Jack exhales—long—slow—contemplative.

“I mean,” she whispers, her words trembling a little, “this space vehicle might not even make it out to Mars...” Nellie turns her ear towards his heart and listens for a moment—there—right there—now—right now—alive and real and tangible, not millions upon millions of miles away on another planet altogether. “For all we know, it might not even make it out of Earth in one damned piece!”

Jack laughs a little. “I thought it was supposed to lose a piece or two on its way up.”

Nellie almost smiles. “All three stages of reusable launch vehicle¹⁷⁷... and payload fairing¹⁷⁸...”

“See? Lots of pieces!” Jack exclaims, prying her far enough apart from him to meet her wary gaze.

¹⁷⁶ (Doody & Stephan, Chapter 14. Launch Phase, 2015)

¹⁷⁷ (National Research Council, 2012)

¹⁷⁸ (National Aeronautics and Space Administration Lyndon B. Johnson Space Center, 2014)

“Jack...”

He gives her a weird grin. “I vote right thing and all the right pieces, because we’re never going to escape this hell on Earth, and we’re not going to last forever, and we’re never, ever going to have children, and... I guess I like this whole idea that someone... somewhere... might just get a second chance at life because of all this; someone might even remember us long enough for our existence to matter.”

Nellie returns her head to his chest, and, after a moment, she begins to smile again.

Hope... Tastes a heck of a lot better than doubt.

She hopes its flavor lasts.

“Right thing and all the right pieces then,” she replies. Then she lifts her face towards his. “And, Jack?”

“Yes, Nell?” he murmurs, and she waits for his lips to part from hers.

Then she meets his glittering emerald eyes and grins a little wider. “Never swear never.”

[earth;; What is Home]

Farea looks at the robot. Although its appearance is very similar to that of a human, it is not the same. She cannot feel any emotions coming from it, nor a pulse, nor movement. She knows that it is just wires and wires, nothing more than electricity and lines of coding.

“What are you doing here?” Farea asks.

The robot turns its head. Her eyes meet lightless orbs, as if she were staring at a dark-tinted mirror. She cannot see anything beyond the black screens. Not a single camera. Not a semblance of a soul.

“Get lost...” she says, turning her head in the other direction.

Farea brings her legs to her chest and hides her head in between them. The smell of the iron in the bloodstains splattered across her shirt makes her remember everything. Closing her eyes, she can still hear the sound of the bullet... the body hitting the ground. She shakes her head and starts sobbing again.

“What is wrong with me...” she cries. “What am I...”

Lost in her thoughts, Farea cannot stop sobbing. *‘It’s all my fault.’*

“Why...? Why is life so...? My dearest friend, killed because of me... Innocent people purged...” she breathes heavily, trying to unblock her nostrils.

Farea feels a soft tap on her back. She looks up and sees the robot looking right at her. Its expressionless visage does not tell her if it feels something or if this is just an automatic response.

“How can you understand... You guys are just robots.”

The grey humanoid puts its index and middle finger together on top of its thumb. Tapping its index and middle finger, it gestures something, as if it were telling her that she talks too much.

“You are right. I should stop...” She wipes away her tears with her finger. But she cannot wipe away the sorrow governing her mind. She cracks again and cries. Head in between her knees, Farea sobs heavily. She feels the cold touch of the robot’s hand on her back, trying to comfort her.

“I just...” she sniffs. “I just don’t understand...”

The robot remains idle in the same position, as if it did not know what to do. Farea tilts her head upwards and wipes her tears. She looks at the humanoid.

“What kind of robot are you anyways?” she asks while clearing her throat.

The robot draws a circle with its finger.

She wipes her nose. “Another rock?”

It points to her, then at the sky. She looks up. The sky is as clear, bright, and blue as the cleanest of all waters. It reminds her of pictures of Crater Lake that her dad used to show her; she would pay anything to have a sip of that clean fresh water now. Unfortunately, she left everything at base.

“From the sky? What are you? E.T.?”

It shakes its head in disapproval. Then it points at the sky again, staring passively at her. Farea would like to have some facial hints, maybe words written down in the dirt.

“Why can’t you just tell me where you are from?”

The robot makes more hand gestures. Two knuckles, index and middle finger twisted, and another knuckle. Sign language.

“I don’t understand,” she says sincerely. “But I don’t know myself.” She should have paid more attention during her middle-school disability class.

The robot tilts his head to one side. Farea hears some engine noise. Cylinders and some machinery in his body.

“I tried to find what home means to me. Do you know how it feels to be in a place that you don’t identify yourself in? My parents are from different ethnicities. I lived in a place different from both. I always felt excluded, no one who I could relate to.”

Farea starts remembering about her childhood. Multiple abuses because of her looks, the constant racism she had to live up to, the bullying by ignorant people.

“Actually...” she remembers a girl who had a similar background story to hers. “There was that one girl... She was Indian but lived in a different country. We used to have conversations about what it was like to be different.”

Farea smiles.

“It’s funny, she would tell me how people would make fun of her just because she spoke the formal language. You can learn languages, and you can learn customs, but you will never be part of it.” She looks at the robot. “Do you understand what I am saying?”

The robot turns its head. Raising its hand then lowering it immediately, the humanoid shrugs.

“Well... You will feel extremely lonely. I’ve spent my whole life moving from one place to the other, leaving behind my friends I cherished the most.”

The robot nods and sits down next to her.

“It’s hard... A couple of days ago, I left my new family to die... because of people I brought, because I joined something I don’t believe in...”

Farea closes her eyes.

“You know, in the end, what matters most is people who are dearest to you.” Farea opens her eyes. She has come to realize what is precious in her life.

“I have shared adventures with a girl. She loved this place. She joined the enemy to make the world better, because the world was her home... our home... my home.”

She gets up and looks at the sky. The sun is setting to her right. She just needs to go to her left, and she will eventually reach the East Coast of Florida. She looks back and smiles.

“Thank you so much, Robot. I know what is valuable for me now. Whether you come from another planet or from Earth, the only thing you can call home is where your comfort zone is right now.”

The robot nods.

“For me, home is Earth. And I know I can make a difference here. I have to go back and finish what Arine wanted... A better Earth.”

She starts running East, not only leaving the robot behind, but also abandoning all of her doubts about what home meant to her.

[Mars;; 13]

Restarting...

I think I get what humans were trying to express when they came up with the word 'reincarnation'. I can't explain it. I don't know where I went or how long I was gone. I have no idea what happened since I lost the machine-equivalent of consciousness. I just know I'm back.

It's weird.

SUBJECT = Fiona Jameson; ID = FJ20273

I don't why her lab is the first place I decide to go. Everything seems to be functioning well... exceptionally well, to be honest, as if one of the other robots had gone on a fixing spree and repaired everything from unresponsive motion sensors to burnt-out LEDs to loose floor tiles. Everything except her.

She doesn't seem to notice me there, as she steps out. She seems frustrated and dazed, almost confused. I follow her back to the living quarters and watch her strap herself to her bed, close her eyes, and drift off into the Simulation.

Then it hits me.

Fiona seems to feel more isolated now than ever before.

It's true that she's a bit more of a loner than other people on the settlement. Most of them tend to focus on themselves and hang around in their own groups of a few people, while she, for the most part, divides her time between the Simulation and her lab. Every time she's awake, she's in there, going over the same information they found a year ago, sometimes more than half a decade ago, just in case she finds something they missed the first fifty times.

That's just how she deals with their situation, how she handles herself.

Yet being forced into isolation is completely different. There's a new effect on her, manifested in a yearning for contact that she doesn't usually feel. She's fine being alone; sometimes she even craves a few moments of complete isolation from other people—although this settlement of ninety isn't exactly a bustling metropolis.

But this is different.

She finds isolation on her own terms to be calming, contemplative, a chance for her to take a step back and just think about the things that happened. These brief moments in her own space give her room to breathe.

But this...

Fiona is slack-jawed, as she stares at Andrew and Desmond. They both look incredibly pleased with their conclusion.

"Since we're going to be connecting to Earth anyway," Desmond begins. "And we'll be helping them get supplies..."

“We thought it would make the most sense for us to gather materials to get us back to Earth.”

Fionna feels nauseous. Her hands feel clammy, like a freshly caught Mississippi fish. There had been nothing left for her back on Earth; that’s why she’d sacrificed her sanity to get up here. Closing her eyes and thinking about the planet she left behind brings to mind only Martian winds and the synthetic look of plant life that the Simulation creates.

She doesn’t want to go back to Earth.

“Why are we going back?” she asks. She can see the looks of her fellow scientists, as they speak amongst themselves. There is hesitation, but they are all considering this to be their best course of action. The same metal walls and reddish sky that inspire her to live have filled them with exhaustion, and they long for their homes, for familiar skies and perhaps a few new companions.

On Earth, Fionna pauses and looks at the sky. The Simulation gives it a sickly greenish-yellow color that reminds her of news reports about tornadoes and dead people that used to plague her parent’s TEV.

Around her, the tone lightens. Stories of home, of things they want to do once they get there, of ideas for making this crazy plan work, all manners of things and hopes echo around her.

Finally, she speaks.

“Doesn’t this seem like a bad idea?”

The room quiets down. She can feel all eyes on her, boring into her being like drills of judgement. “Launches from Mars to Earth—they’ve never been done before. It’s dangerous.”

Silence.

Then:

“It can’t be any more dangerous than being here is.”

Desmond steps forward. “It’s true. There have never been launches from Mars back to Earth. But even after they send us the things we need, who’s to say how long it’ll be before there’s another crisis and we need Earth’s help again?”

There’s a hum of agreement.

Desmond continues speaking. Suddenly, it feels like the world is closing in on her.

“In my opinion, it’s better to be there than stay here. At least there we can do something active to keep ourselves alive. I’m sure I’m not alone in these sentiments.”

Those around her approve more vocally.

“Here,” Andrew pipes up. “We’re just waiting to die. We can’t even leave the settlement without spacesuits or else... well, we’ll meet the same fate as Yvette.”

There is a moment of silence for the woman. She had been found bloated and sunburnt beyond recognition just a few meters away from the airlock, covered in a layer of red dust.

Fionna misses the woman. She was sweet.

“Not to mention the fact that things are falling apart. Even Iliad.”

‘The robot is working fine,’ *she thinks*. ‘It’s repairing things just as well as before. Even better, I would argue.’

“What does it matter how Iliad is?” she says. “It’s just a robot. It still works, doesn’t it?”

Her feet bring her steadily south in search of a rundown factory. She looks around. The trees seem too green, the road, too smooth and black. She definitely feels more ruts and bumps than the Simulation is showing her. There doesn’t seem to be anyone around her, which bothers her a little for some reason, although in the distance she can see someone walking.

“What happened to Iliad is a sign,” someone says. Fionna recognizes the voice as Chad Winston. His hair, stiff with dirt, is pulled into a tight ponytail. “Who knows what else might happen? It’s a sign, man, a sign that Mars wants us to leave!”

*“A **sign**? It’s not a sign, you fool,” Fionna retorts. “It was removed. By hands! Human hands!”*

“We can’t be sure of that!”

“We can!” Her chest is rising and falling quickly. “I can!”

“Oh really, man?” His tone is condescending. “How?”

“Because I have it!” she exclaims, reaching into her pocket and producing the cool flat bit of metal. It’s rectangular and grooved to fit comfortably into the notches of my inner workings.

I take another step towards her.

I think I understand why her lab was the first place I decided to go. If I were human, then I could get away with blaming a subconscious desire to see her suffer for messing with me and everyone else on Mars. But I’m not. I’m programmed to fix things, so I must have sensed that something is wrong with her.

Now I know that she’s the problem.

*“There are no **signs**!” she continues. “Everything is fine here! We can just... put this back, and everything will be fine, and we can all—”*

“Fionna....” Andrew’s voice sounds slow. All eyes actually are trained on her. Their gazes make her shiver. “Why... do you have that?”

She can see the factory looming overhead, as she wades through the high grass to reach the slumping entrance. The minimap shows that this place would be a good source of metal and tools, especially if she can find something that isn’t rusted.

Though, she’s sure the people at Kennedy Space Center could find something to use the rusted metal on.

“I... I just...”

“Did you remove that from Iliad?” she hears someone say.

*“Were you **tampering** with one of our only functioning robots?”*

She looks around the abandoned factory. She can recognize the steel and the titanium.

“What if you broke something?”

“Were you even thinking?”

“Enough!” Desmond’s voice cuts through the chatter. He gives Fionna a level stare. It isn’t his normal jovial look. This is like ice-down-the-back level of cold stare. “Fionna. You could have done irreparable damage.”

“It’s just a personality drive! Iliad functions fine without—”

“And what if Iliad couldn’t function without it? Did you put any thought to that?”

Fionna opens her mouth. She closes it again.

After a brief silence, Desmond says, “We have elected to go back to Earth. We’ll need sustaining equipment to keep us alive until we’ve reached that point. I think we can assume you are mature enough to help gather things that everyone needs.”

She gives a stiff nod.

“Good.”

There is the sound of shuffling. People move away from her, congregating closer to Desmond and Andrew. She stands alone on the other side of the room.

Anikka walks up to her. With those big owlsh eyes, she stares at Fionna before taking my personality drive from her hand. Then Anikka pushes past Fionna out of the room.

‘This a new feeling,’ she thinks, as she hefts a rolled up steel coil onto the shoulder of her avatar. She turns to leave—she’ll have to tell the others about this place when she gets back to the base. ‘Being so completely alone.’

*She’s never craved Kirkpatrick’s attention so much ever; at least it was *something*.*

Seeing the forest brings uncomfortable memories to her mind. It makes her think back to the construct in the Simulation she’d named, with his big innocent eyes and heavy head, the way he would nudge her and knock her over. Even though she’d made a fuss about it then, right now there is nothing she wants more than to see him again. Perhaps she thinks he will comfort her. Perhaps she just wants someone, anyone, to acknowledge she is there.

As Fionna walks through the trees, she notices a form. She can tell it’s a person—the Simulation hasn’t been designed to fake people. The world around her is strange in its unrealness. It almost seems to tear at the edges, and if Fionna moves quickly enough, then she can catch small visions of what the world really looks like.

She’d been warned by the people at KSC to be careful of other people: They are desperate and dangerous and will do anything to survive; give them a wide berth, for the good of the mission, for the good of the Resurrect.

Perhaps that’s why she moves closer to the form sitting on the large rock. After all, Fionna is the one who jeopardized their mission the first time by tampering with me.

She tries to speak. She remembers that the avatars don't have any sort of speaking functionality. *'How does Anikka communicate without being able to speak?'* If Fionna had to do this for the rest of her life, I'm pretty sure she'd go nuts—more so than she already is. Fionna thinks back to Anikka's gestures and figures that emulating them is her best chance at communicating with this girl.

Fionna curls one of her hands to her mouth and makes a loose fist with her index finger extended. She waggles this finger up and down a bit before pointing to the woman on the rock.

This motion gets her attention, but there is some kind of miscommunication.

“What are you doing here?”

Fionna freezes.

“Get lost,” the girl snaps. Then, without warning, she begins to cry.

Fionna rolls her eyes—an emotional wreck on Earth is the last thing she wants to deal with right now... But something about her haggard posture, her pained voice, her agonized words, compels Fionna to stay, and, as the girl continues to speak, Fionna begins to listen.

. . . .

The last thing she sees before waking up on Mars is the ceiling of the First Mars building. There's a hole there, covered with a dusty blue tarp to keep the elements out and prevent the rain from coming in and damaging anything important.

Fionna sits up and hops out of her bed.

Her thoughts are distant and unfocused. She, like her comrades, can't see the Earth as it truly is. They rely on their memories of the big blue marble to shape what they assume the Simulation is concealing from them.

What they assume is there.

What they remember to be there.

But those people she just spoke to on Earth told Fionna otherwise. Beyond the constructs of the Simulation, there's nothing that looks like the Earth they used to know. Long stretches of barren dirt, some parts scorched and hard, other parts heavily overgrown with big, wide-leaved plants. War and blood are common, as the divide between the haves and the have-nots widens. Smaller groups keep rebelling against bigger groups that step up to control the human race in this dark time.

They told Fionna about it all. About the scarcity of food, and how hard it is for children to be born. Those that are born and survive face an uphill battle. In a harsh landscape, no one thinks about the children.

The more Fionna thinks about it, sitting up from her bed, the more she finds evidence to support her conclusion that Earth is no better than Mars. This is something she has always believed, but there has never before been proof to put towards it.

On Earth, there is a shortage of everything that leaves many who need food floundering. Mars is better—at least they all get the same amount of food. They suffer together.

On Earth, they fight and kill for dominance, and at least on Mars they coexist.

Fionna sits and wonders. Although this proves everything she has been postulating as true, it also leaves a bitter taste in her mouth. Can she tell her comrades the truth, even when so many of them want to return to Earth? Do they even deserve to know, after how they treated her because of what she did to me?

A better question would be: Could she condemn them to an almost-certain death out of spite?

She sits for another minute before standing and walking to the terminal.

Andrew is at the controls. It's always him, now that they are making plans to launch back to Earth. He has the best relationship with the ground team, after all. Taking a deep breath, Fionna walks up to him and taps his shoulder.

"Anikka, you're out already?" He turns to look at her, an exhausted smile on his lips before he realizes that it's not Anikka. Fionna can see his face fall, as he turns back to the keyplane and the screens in front of him. "Hello Fionna."

"Andrew."

There is a long silence.

"Andrew?"

More silence.

"Andrew!"

He finally looks over his shoulder. "What do you want, Fionna? I'm busy."

She sighs. "I spoke to people on Earth."

"Yeah, so did I."

She squints at him. She probably deserves that. "People other than those guys."

He turns and looks at her, his eyebrows drawn together slightly. "Is that right?"

"They told me about Earth. About what Earth is really like."

"And why should I listen to what you have to say?" Andrew's response is quick and cutting, almost defensive. As if she were crazy to insinuate that Earth is anything other than the lovely thing everyone else still believes it to be. "Considering what you've done so far."

"I removed Iliad's personality and that was a mistake. I admit that," she says quickly. "But this has nothing to do with that."

"So you're not going to go off on a rant about how Earth is evil?" Andrew asks sarcastically.

"No," she says. "But I will tell you that the people you've been talking to haven't been so honest with us."

Before he can say something else, Fionna plows on. "How much have they actually told you about Earth? Do you know anything about what it's actually like?"

"Of course they have!"

"Then what do you know?"

Andrew opens and closes his mouth for a few moments. Realization begins to color his face.

“They’ve been keeping us in the dark. But I found people who told me what it’s really like. And it’s nothing like home.”

Andrew is quiet for a second before he blurts out, “Tell me.”

“Are you sure?”

Andrew nods stiffly. “I need to know.”

Fionna nods and takes a deep breath. “Alright. I’ll tell you what they told me.”

[EARTH;; Countdown to Launch]

T-3 minutes.

Fingers shaking and heart pounding in time with his racing thoughts, Ben taps his earpiece again and re-activates his mic. “This is FMTD, conducting the Launch Status Check¹⁷⁹,” he begins, and some part of him smiles at that acronym—FMTD—First Mars Test Director. Right here, right now, those four letters mean that all of KSC and all of Mars are listening to him because, right here, right now, he is in charge.

He takes a deep breath, cycling through his list of contacts one last time before commencing the Poll:

Nellie is his TBC—Tank/Booster Test Conductor—responsible for checking all systems on ground and onboard their launch vehicle that control its external fuel tanks and rocket boosters.

Mollie is his PTC and SPE—Payload Test Conductor and Spacecraft Project Engineer—tasked with monitoring all subsystems within their payload and ensuring proper integration of everything that comprises their launch vehicle.

He is his own LPS and Safety Console—Launch Processing System Test Coordinator and Safety Console Coordinator—master of every digital computer and q-unit in LCC.

Andrew is his Mars Flight—director of operations from their Red Planet receiving end.

Jack is his KUS and SRO—Kennedy Uplink Station and Superintendent of Range Operations—point person on all existing and semi-functional spaceflight tracking and data network stations with access to enough real-time radar data to monitor weather, pick up on airborne threats, and track their launch vehicle both during and after liftoff.

Will is his STM and LRD—Support Test Manager and Landing and Recovery Director—responsible for communicating with Resurrects to keep track of all ground support systems, including launch pad and LCC power and KSC-wide security, before launch and monitoring locations of jettisoned boosters after liftoff.

“All stations, verify ready to resume count and go for launch,” he states. “TBC.”

There is a brief pause. “TBC is... go? Did I say that right?”

“Yeah, Nell,” Jack mutters through their makeshift KSC LDCS—Launch Day Communications System—six wireless earpieces all operating on a single radio frequency and linked to Mars through the remnants of the KSC QuComm system.

“Okay—TBC is go.”

Ben rolls his eyes at those two. *‘Ignorants.’* He hopes Nellie and Jack can limit their mistakes to syntax errors, because he needs each ‘go’ to actually mean ‘go’. “PTC.”

“PTC is go for launch,” Mollie states.

“LPS is go,” he adds. “Mars Flight.”

“Mars Flight is go,” Andrew replies. “Let’s rock and roll!”

¹⁷⁹ (Leckart, 2010)

Mollie chuckles into her earpiece, and Ben clenches his fists. He has no idea what that is supposed to mean, but he has no intention of allowing any type of rocking or rolling to occur during any part of this launch!

“KUS,” he continues.

“KUS is go,” Jack utters, and Ben almost smiles.

“STM.”

“Go,” Will grunts.

“Safety Console is go. SPE.”

“SPE is go for launch.”

“LRD.”

“Go.”

“SRO.”

“SRO is go—range is clear to launch,” Jack declares.

Ben nods, a pulse of excitement coursing through his arteries and veins. “This is FMTD, declaring the Launch Team is ready to proceed.”

“Okie, FMTD,” Mollie begins. “Launch Director and Chief Engineer speaking here. Please verify ready to resume count and go for launch... KSC Safety and Mission Assurance.”

“Go,” Will replies.

“Okie... Payload Launch Manager is go... Range Weather.”

“Range Weather is go,” Jack adds. “Wind gusts less than 2 miles per hour until T plus 40 minutes. Rain showers expected around T plus 3 hours, and thunderstorms due to arrive at about T plus 5 hours, but no constraints for launch right now.”

Ben almost grins up at that clear blue sky outside of LCC—perfect.

“Office Manager,” Mollie continues.

“Mission Management Team is not working out any issues,” Ben states, scanning each of his 37 computer and q-unit monitors once again. “We are go for launch.”

“Okie, then... Clear to launch Genesis XIV Gold Eagle-I,” Mollie declares. “T-90 seconds to go.”

89

88

87

Watching...

79

78

77

Waiting...

69

68

67

Counting down to those final 10 seconds...

Everyone is safe. Everything is go.

“T-11,” Ben mutters to himself, “10... 9... 8... 7... 6...”

“Main engines fired up!” Nellie rushes.

“5... 4...”

“90 percent rate of thrust achieved,” Nellie announces.

“3... 2... 1...”

Mollie sniffles a little into her mic. Then she clears her throat and confirms that beautiful miracle blasting off right before Ben’s ogling eyes. “We have liftoff.”

[Part III;; READY OR NOT]

[EARTH;; No Place to Call Home]

“Here,” Will grunts, holding out a deformed rectangle of edible mush—Nellie-Food, as Ben calls it—and Athie grimaces, inviting Will to collapse on to that patch of greyish crab grass and clover beside her.

“So fucking hot!” he whines, as he pulls his sweat-drenched t-shirt over his head then flattens his sun-darkened body against the sunbaked ground.

Athie nods. “Should cool off a little after dark.”

Will groans.

“Quit grumbling, Gator,” Athie jeers, taking in his gleaming tan—as much bone protruding through his skin as muscle now, yet still reminiscent of his good-enough-to-go-pro-Division I-varsity-athlete build—to him, at least, more a reminder of how awful his life is now than of how wonderful his glory days had been.

“Hurricane,” he mumbles, and Athie grins.

“Sweat makes you look good,” she continues, “like you straight-up earned these fifteen minutes to flop on the ground and scarf down your food ration, and you aren’t just taking them for granted.”

Will almost grins back at her. “Fuck are you talking about, Fireball? I’ve been working my ass off for weeks now—which is a hell of a lot more than you can say.”

Athie gapes at him. “And whose fault is that?”

Will shrugs.

“No one else dragged me up to LCC and just left me there to wait for Andrew,” she reminds him, and he opens his mouth. “No one.”

Will rolls his eyes. “Speaking of Andrew... You tell him yet?”

Athie stares down at her lump of Nellie-Food. “Tell him what?”

She knows... He knows that she knows.

“Fireball,” he growls, and Athie sighs.

“No... I—”

“What the fuck are you waiting for?” Will chides. “Our next payload is supposed to launch in less than a week, and our plans for it are all over the fucking place right now! We need some goddamned input from his end!”

Athie shrinks away from him and squeezes her eyes shut—useless gesture... because she still sees him lying there, propped up on one elbow, fuming and more frustrated with her than ever before.

“Just tell Mars how fucked up Earth is!” Will snaps. “Then tell us whether or not they still want to come back! That fucking simple!”

Athie returns to her feet, gritting her teeth and shaking her head at him. “Not *simple* at all!” she growls. “To them, Earth is a flipping paradise compared to Mars! They can’t wait to leave—They can’t wait to come home! And, once I tell Andrew... once all of them know... none of those people out there are even going to have a place to call home.”

Will rolls his eyes again. “Suck it up and tell Andrew, like, ASAP, so we can load that second crew module and hook it up to this other rocket before our fucking launch window closes!”

Athie pouts at him then storms off to LCC. “I guess I owe them the truth at this point,” she grumbles to herself, “the whole truth...”

I should have been more honest with him all along, because this conversation is going to be impossible.

She slips inside and hikes up to Firing Room 3, where—lo and behold—that missed-message QLED is already blinking and bright. Athie frowns at it for a moment, noting its timestamp. Then she grits her teeth and connects to Mars, not even bothering to listen to whatever Andrew had felt a need to say thirteen minutes earlier.

“Athie in. Listen, Andrew, because I have a lot to talk to you about.” She slams her finger into the uplink switch then punches the downlink switch.

“Okay—”

Punch—Slam!

“First, tell me what all of you expect to find when you get back to Earth.”

Slam... Punch.

“I don’t know... Whatever it is, we figure it’s still better than what we have up here.”

Athie buries her face in her hands. “I know Mars is a complete mess right now, but, once that stuff arrives in another few months, at least you’re going to be able to fix things up a little...” Her breath catches in her throat, and she is overcome with a powerful urge to shut her mouth and run, but she somehow manages to remain seated. “Earth... is...” she begins.

There is nothing left to tell but truth.

“To be honest, Earth is almost uninhabitable at this point, and there is *nothing* that we can do here to make things better.” Athie gulps in a deep breath, offering him the downlink.

No response... Just silence.

Punch—Slam—Then she forces herself to suck it up and barrel on.

“Our lives suck—I mean, I grew up in a flipping supervan because Mollie never got cleared to settle down anywhere after Trey was murdered by one of those flipping Ignorants! Then we took Ben in because another group of those... *assholes*... knocked off both of his parents, and (not that food and fresh water were ever easy to obtain before) then survival became close to impossible! Then we found Will and Bess, and—gosh darn it—we almost gave up and sacrificed that poor dog for dinner six times before we got lucky. Believe it or not, Andrew, I used to have enough stamina to run a flipping marathon! Even Ben used to be strong enough to help push that supervan uphill on a muck-and-rubble road, and Mollie used to have enough meat on her thighs to still call herself a rower! Now look at us—skin and bones—more bones than skin—one ration more than starving to death, just like Mollie and I have been ever since I was eight years old!”

She feels something welling up within her, and she hears her voice crack a little.

“This is no place to call home,” she continues, fighting back those hot, exasperated tears that Mollie has never allowed her to cry, remembering that god-awful mantra that Mollie has forced her to memorize: *This is our life now—either we live it, or we die.* “There is nothing here worth coming back for now, especially since we’re sort of in a position to send you everything you’d need to stay... So... um... Let people know... the truth—the whole truth... Then tell us what you want to do... Because we can still send stuff to bring all of you... here.”

Athie slams the uplink switch off and punches the downlink switch back on. Then she waits for Andrew to offer her... something...

“But I think most of us would rather prepare all of you to stay,” she whispers, “because our situation on Earth might just be worse than your situation on Mars.”

All of a sudden, Athie hears a crackle in her launch-comm earpiece, and her blood runs cold.

“Jack online from KUS, requesting a team muster at LCC—ASAP—We got a problem.”

[EARTH;; Uninvited Guests]

Mollie freezes, as Jack's voice continues to charge into her earpiece.

"We got a problem—Radars here are picking up a small fleet of drones—armed—coming in from due west—be here in a matter of minutes. We got to get some Resurrects out there to hold them off, and we got to secure our launch pad. If there are people coming in after them, then this could get ugly."

Mollie tries to regain control of her breathing, as her fingers grope for that input switch on her earpiece; she has just one question that she needs Jack to answer. "Who?"

Silence.

Her own heartbeat continues to pound—erratic and rapid and loud—in her ears, as she waits for Jack to respond with a name.

Then she hears Nellie's voice—cutting and colder than a shard of Arctic ice. "He knows who—We all know who."

Mollie shivers, remembering a rendezvous, a wall of police vehicles, a fleeting moment of wanting to trust the ex-officers within them... Then all of those guns releasing an onslaught of bullets in perfect unison, William fumbling around in the back space of the JLTV for a loaded microgrenade launcher, and all of those vehicles closing in.

'Thank the universe we were in a JLTV.'

Then Mollie sucks in a deep breath, pockets her multitools, and scrambles down from their launch pad to join everyone else in LCC. Before her feet even return to Merritt Island ground, Benjamin's voice is blurting all sorts of status updates into her earpiece.

"Three-hundred ninety-seven seconds to Checkmate... Homing beacon sent out to Resurrects—Target specifications relayed to autonomous weapons systems—Notice: AWS Calibration in Progress—Position assignments relayed to Mars—Notice: AWS Calibration Complete... Acknowledgement of receipt acquired from Andrew—Ten grounded Resurrects in position around our launch pad; forty-five fielded Resurrects in route to KSC... Three-hundred sixty-five seconds to Checkmate."

Mollie storms into LCC, as several deafening rifle shots ring out, and one of those battle drones begins to plummet from the flawless blue sky in a spiral of black smoke and smoldering spitter plastic.

"Nellie," Mollie gasps, struggling for breath, "those guns are fantastic."

Nellie offers Mollie an anxious nod, a graphene vest, and two handguns—one a microgrenade launcher, one a hunting weapon.

"WHAT THE FUCK!" William explodes, charging in behind her. "BUNCH OF GODDAMNED ASSHOLES!"

Jack and Athie nod in unison.

"Cops used to be around to help protect people," William roars, "not drone them down!"

“These are ex-cops,” Nellie states, tossing him a graphene vest and a pair of microgrenade launchers. “No laws for them to follow now, and no people left for them to protect except for themselves.”

“Why the fuck are they even here?” he snarls, as he snatches both guns in midair, flicks off their safeties, and whirls towards Nellie and Jack. “Huh?!”

Jack lowers his gaze.

“They want Jack,” Nellie utters, meeting William’s accusing glower. “They might also be hoping to saunter off with my vehicle and most of whatever they think those Resurrects have been dragging back here from all over eastern Florida.”

William grits his teeth, muttering another onslaught of curses under his breath. “So how do we stop them?”

Jack narrows his eyes at nothing in particular, as Nellie snaps a new magazine into one of her sniper rifles and sets her jaw.

“We take out their drones,” Jack begins. “Then we blast their vehicles and separate their survivors. Most ex-officers are weak one-on-one, and none of them are well-trained in hand-to-hand combat.”

“Microgrenade launchers are more than enough to handle their vehicles,” Nellie adds, “and—worst comes to worst—render an excessive veneer of graphene armor pretty damn useless pretty damn fast.”

Mollie gulps—she has no desire to do such a thing to another human being this afternoon.

“How many?” Benjamin asks, still eyeing that pair of handguns at his feet as if it were a tag-team of rabid animals.

“Give or take, twenty-five,” Jack replies. “Chief never sends more than seven on a scouting mission, and he always invades with fewer than forty—he figures he can lose a full half of his force and still recover, but he prefers not to compromise his ex-officer core. This also happens to be something he knows he might not win.”

Benjamin shakes his head hard enough to fling his feelings of panic aside and pulls out his Rubik’s Cube.

“Chief trains them to aim for the head,” Jack mutters after a short pause, “because a bullet to the brain is enough to knock most people dead... and he likes to think that he knows better than to leave survivors.”

“Either we kill them,” Nellie concludes, her voice more frigid and unforgiving than ever before, “or they kill us.”

Mollie sets her jaw, tightening her grip on her two guns before offering Benjamin and Athie and William a smallish nod. “Then we kill them.”

Jack and Nellie crouch behind the door.

“Ben,” Jack utters, “are we go?”

Benjamin tears his eyes away from his Rubik’s Cube and scans a series of q-unit and computer monitors. He cranes his neck towards one screen in particular and stares at it for a moment. Then he nods. “Go.”

Jack, Nellie, William, Athie, and Mollie charge outside, clicking their safeties off and raising their guns in unrehearsed unison, as Drones continue to crash and burn all around them, showering them with scorched debris like meteors disintegrating into meteorites. Benjamin's voice floods their ears with reports of seven armed combatants abandoning jet skis on the east bank of Indian River plus twelve amphibious police vehicles clambering up the shore behind them plus four gunned-up police boats fanning out along the west coast of Merritt Island behind them.

Jack pales a little and prods his earpiece. "Reprogram two of our Resurrects to target those boats."

"New target specifications relayed to autonomous weapons systems," Benjamin replies. "Notice: AWS Calibration in Progress."

"Nellie," Jack begins.

"Infantry—Got it," she utters, already dashing west.

"Notice: AWS Calibration Complete," Benjamin rejoins.

"Mollie and Athie," Jack continues, "take our JLTV out for a spin and engage those vehicles."

"Okie," Mollie agrees, as Athie sprints over to the driver side door, and a thunderous boom reverberates across Merritt Island with enough shear force to compete with a California earthquake. Mollie almost stumbles into William before she catches herself and races after Athie.

"Police boat problem exacerbated!" Benjamin shrieks into their ears. "Damage sustained to VAB!"

Mollie feels her heartrate quicken, as she glances over her shoulder at a plume of smoke rising from a not-quite-remote corner of Vehicle Assembly Building.

"Will," Jack shouts over another massive, ground-trembling blast, unclipping two hand-held remote units from his belt loops and tossing one over to Will, "we follow them on wheels and protect their blind spots."

Mollie notices William respond with a reluctant glare, as she straps herself into the passenger seat and directs Athie to step on it.

The JLTV skids away from LCC, barreling towards those twelve other vehicles with enough momentum to match a 2018 freight train. Mollie pulls up a hologram of real-time LiDAR Range-Doppler space and points out each of them to Athie.

"How close do we need to be?" Athie asks, spotting Jack and William amidst a cloud of kicked-up dirt and sand in the rearview mirror then adjusting her course.

Mollie feels more of those earth-quaking booms, as she studies that flickering blue-laser light before her and attempts to ignore a slew of updates from Benjamin about damage sustained to Headquarters, to Cerebrum, to LCC... Her breath catches in her throat, and she struggles to maintain some semblance of composure. *'Hang in there, Benjamin!'*

"Mom?" Athie presses, glancing over at Mollie. "How close?"

"A few hundred feet," Mollie replies, and Athie nods.

She hears Jack bark at Benjamin again, and a different kind of explosive bang resounds across Merritt Island.

She shivers.

“I think one of our Resurrects just sunk one of those boats,” Athie whispers. Then she takes a deep breath, increases her pressure on the accelerator, and tightens her grip on the steering wheel. “You know you have to hit these vehicles.”

“I know,” Mollie mumbles, shifting a little in her seat.

“The universe is indifferent,” Athie continues, “and no one left on Earth or Mars is ever going to have a reason to hold this against you.”

“I know.”

Athie pauses for a beat, as two more of those explosive bangs pulse through the air.

“Police boat problem solved,” Benjamin announces, his voice soft and shaken enough to drain every last hint of color from both of Mollie’s cheeks.

“Remember when you believed in God and Heaven and forgiveness and life after death?” Athie prods.

Mollie almost feels a desire to snort. “That was a long time ago.”

“But a lot of different sorts of people have been all over that stuff for thousands of years, so there might be something to it.”

Mollie closes her eyes.

“Doesn’t hurt to hope that some of these ex-officers are going to end up in a better place once we’re through with them,” Athie concludes.

Mollie sighs to herself and clenches her jaw, positioning herself beneath the roof hatch over the back space and tightening her finger around the trigger of her microgrenade launcher. “Okie.”

Athie rounds a final turn, Jack and William just a few JLTV lengths behind, and all twelve of those police vehicles come into view in front of three capsized boats. Mollie jabs her finger into a button, as bullets begin to batter the windshield and ricochet from the windows and doors. Then the roof hatch parts, and she pulls her torso up through it, zeros in on her first target, and opens fire.

BANG!

The recoil throws her back into the JLTV, as her target bursts into a column of smoke and flames before them.

“Nice shot!” Athie shouts.

Mollie feels the JLTV veer left, and she chokes down an urge to vomit. More nauseated than breathless and almost too shaken to stand, she manages to somehow squirm back up through the roof hatch just in time to see Jack obliterate his first mark.

BANG!

‘And another one bites the dust...’ she thinks, and, all of a sudden, she is smiling at thoughts of a hit song from 1980 by a band that her parents had grown up with and taught all four of their children to know and love... something she has not heard since that wonderful little iPod Classic she had been given on her thirteenth birthday up and died on her in December of 2037... *‘I still remember the words to every song on that album.’*

BANG!

The tune in the back of her mind somehow enables her to pull the trigger again.

She hears someone—Jack or William or Nellie—take out another two vehicles, as she musters enough courage to zero in on her third.

Then something detonates beneath the JLTV, and Mollie is jolted out of the hatch and on to the roof. She gropes for a handhold, but the vehicle swerves below her before she can secure herself to anything...

Falling... Floating... Flailing... SMACK!

She feels her torso scrape and tumble across sand and rubble—pain—gasping and gunshots—blur of dust and sunlight and spinning tires and sprinting legs—consciousness—Athe speeding away, and enemies closing in—one finger still hooked around the trigger of her microgrenade launcher—BANG!

“Jack!”

She can almost distinguish a distant crackle above a violent ringing in her ears... *Athe*.

“Jack, I lost Mollie!”

Ebbing... aching... everything there and not there all at once. Then Mollie hears an explosion of gunfire, a hair-raising scream.

There is a sharp transition to rapid-fire repetition of curses in her earpiece... *William*.

“Found her.”

Mollie closes her eyes, as a third voice begins to trickle into her mind... *Jack*.

“Seems closest to me right now.”

“Then go fucking get her before some ex-officer asshole does!” William orders.

“Going,” Jack responds.

Silence... Except for that awful ringing—so much louder than before.

Fingertips press into her wrists and neck. Hands begin to slide down her legs—pain—

“Nell...”

Then nothing is touching her at all.

“Jack—JACK!” William explodes. “HEY!”

Throbbing... sinking... fading... as two rapid footsteps seem to shift further and further away.

“TURN THE FUCK AROUND!”

Mollie closes her eyes and hears nothing more.

[earth;; Come Back]

She finally hears the sound of waves crashing into a beach. She starts running, climbing up the hill of sand ahead of her. Reaching the top, Farea feels the cool winds of the lagoon. If she could, she would thank the people who drove her here. She had gotten lost in Sebastian, but two random people were kind enough to offer her a ride, despite finding her late at night. She slept during the drive.

“Brrr...” She puts her arms together. She looks around and sees a light on the dark water. It seems to be coming from an island on the other side of the lagoon. Then she notices a small campfire further down the beach and starts walking towards it. Soon she can hear several people talking at the same time. As she gets closer, she recognizes the voices of Ursa and Kasha. She squints and sees all the gang there. Everyone except Herm, Arine, and Janko.

“Renace?” Ursa asks, noticing Farea’s shadow. She gets up and runs towards her, greeting her with a warm hug.

Still uncertain, Farea hugs Ursa back. After several seconds, they separate.

“Where have you been?” Ursa says while escorting Farea to the campfire. “It has been some moons since we last saw you.”

“I needed some time on my own,” Farea replies.

Ursa shows her around the fire and sits her down right in between Frose and Kasha. Kasha is wearing long brown robe with diamond patterns on them. Frose, bulky and big as always, sits with his shirt half open.

“Sup, Renace,” he says in a rogue voice.

Ursa opens the cooler and takes out several raw lizards, each stabbed with a wooden stick. She gives one to Farea.

“You must be hungry.” Ursa holds a lizard on top of the fire. “Anyone else?”

Everyone else shakes their head, except Kasha, who raises her hand and quickly receives one.

Hours of walking have made Farea hungry, and her stomach growls in discontent. “Have any water?” she asks.

Kasha turns around and takes out a small kettle. “From the sea, graphene filtered,” she says, passing it to Farea.

She drinks a lot, finishing the kettle. Then she hands it back to Kasha with an apologetic smile.

Annoyed, Kasha gets up and storms off to the edge of the water.

“Lots of things happened... So where do I start?” Ursa asks Farea.

“I guess from the last time you saw me,” she replies.

“Oh... Duhhh,” she says while tapping her forehead. “Anyways, after several hours of searching, L found some fresh blood and decided to create a perimeter to search for people.”

‘Someone noticed the blood after all...’

“By the time he summoned us again, you and Arine were both missing,” Ursa continues. “So we all searched together. Frose found a small group of people a couple of miles away, living like hobos.”

“And then... L went kind of hard on them. Killing one or two, capturing all the rest of them, trying to make them speak,” Frose adds.

“He didn’t ask about us?” Farea asks.

Ursa raises an eyebrow and nods.

Surprised, Farea leans slightly backwards, skepticism furrowing her forehead.

“He did. But they told us they never saw you.” Ursa presses the lizard with her fingers and puts it back on the fire. “Anyways, they revealed some information about some weird things that have been going on.”

Kasha comes back with a full kettle. She sits down and starts cooking her own lizard.

“Apparently, Zetius and the others were chasing this van. By the time they reached it, big blasts. One of the people in the van took several bullets to the chest. They dragged her out.”

Listening carefully, Farea touches her own lizard. Finding it cooked, she takes a bite. It tastes like chicken.

“How many were they?” she asks.

“Five? Six?” Ursa looks at Kasha.

“Five, and one almost dead.” Kasha replies.

Ursa takes a pause. She tests her lizard again. Satisfied, she eats it in one bite.

“So then what happened?” Farea asks while nibbling at her own food.

“They said they didn’t know. They didn’t follow them.”

Farea finishes her dinner and licks her fingers. The juice of the lizard is addictive to her. Then she intertwines her fingers and starts thinking. “And then?”

“While doing the final preparations, Janko came back out of nowhere and told us that he found an abandoned place near the wreckage where people were actually living. L was furious, so he shot him. Just like an animal, in view of everyone.”

Farea gulps. “So Janko is...?”

“Dead. Isn’t that obvious?”

Farea leans forward and rests her arms on her legs. She closes her eyes, dwelling on the horrible scene Ursa just described.

“Did you check the place out?” Farea asks after a while.

“We actually raided the place. Herm told us about new plans. So we decided to check it out. That’s where we found Arine.”

‘That should be when they raided us,’ Farea thinks, concealing her emotions. “And what happened?” she asks aloud.

“Well... We freed Arine. That’s about it. Arine, Herm, and L had a small talk after that.”

‘The gunshot...’

Farea takes a deep breath. “Is Arine... dead or something?”

Ursa and Kasha look at her. No one replies. Everyone just stares at the fire.

“She’s not dead,” says Terris. “She’s doing fine... Or destroying the plans. Depends on how you look at it.”

Farea wonders what she means.

“We missed a launch a couple of days ago, but a second one might happen tomorrow, you know that, right?” Frose asks.

Farea nods, but she does not know what is going on now.

“Since L has disappeared, and Herm is running this operation,” he continues, “it seems that we have switched sides. Tomorrow, when the launch is going, we’re supposed to make truce with them.”

“However,” Eran says, “we aren’t here to make amends; we are here to get on the spaceship and go to Paradise.”

“For once,” Terris says, annoyed, “I am with Eran. We want to go to space, not help them send something else that excludes us!”

Farea understands their desire, but she thought all this was because of L.

“So L wasn’t really behind this after all?” Farea asks.

“No,” Frose says as he stands up. “I proposed going to Mars because I got rejected from the Space Program a long time ago. Do you know how bad it is to be rotten?” He takes out a flyer from his inner pocket. It reads, *Come and Join the New Mars Mission!*

“But... can’t we talk to them?”

“Knowing the people who were in the program, I think that they are selfish enough to leave us here to rot,” he retorts.

Farea does not know what to do.

As the sun rises over Cape Canaveral, everyone gets up and jumps back into action. Farea helps them extinguish the camp fire and clear all traces of their stop from the beach.

“Time to go and conquer space.”

[EARTH;; Not Quite Leeches]

Pain.

“Nell!”

Mind-conquering, muscle-paralyzing, screaming-out-loud pain.

“Stay with me, Nell—come on—stay with me!”

His arms are cradling her now, and his fingers are pressing into her wrist—too much blood for him to find that pulse point in her neck.

“Please, Nell...”

A whisper... soft as his touch but so much farther away.

“Don’t let me lose you again.”

Some part of her tries to hold on to those few words, as another tsunami of pain crashes down upon her... and everything—even Jack—seems to vanish beneath that wave.

. . . .

“Should we hate them?”

Her own voice—soft and timid and more than six years younger.

“Well...”

Her voice—hesitant... indecisive—because Nellie still clings to her like blankie and battle shield after each of his episodes, and she is sure that Nellie sort of looks up to her now...

“We should hate what they do... what they’ve done... but we shouldn’t hate them.”

Her own brow furrowing a little, and her entire being shrinking back from Auntie Gene.

“Is it bad that I do?”

Her face breaking into an understanding smile.

“No... To be honest, Nellie, I hate Leeches, too... just enough to wish they would... stop... but not enough to wish they were dead.”

Nellie nods.

“I could never kill one of them... but sometimes I wish someone else would.”

Nellie is yanked to consciousness by a crack of thunder close enough to be a gunshot. She opens her eyes, groping for oxygen and a firearm and a sense of where on Earth she is right now—breathless—lightheaded—a little bit nauseous... but all six of her holsters are loaded, and Jack is right there beside her, so everything must be... Nellie blinks.

“Jack?”

He attempts to smile in spite of a busted-up lip and a bruised eye and more than a few stitches zigzagging across those gashes in his face.

“What happened?” she chokes, and he lowers his gaze.

“I messed up.”

Nellie blinks again, convincing her mind to take in more of her surroundings, noticing a low ceiling and a slanted window in a trunk-like door—vehicle—not her JLTV—hearing little more than her own troubled breathing above a raging storm—no active spitters and no other passengers—tasting a hint of salt in humid air—Florida... Indian River... She peers out into that lightning-lit darkness at a long stretch of unfamiliar shore... not KSC.

“Tell me,” she murmurs, slipping her more movable arm around Jack and resting her forehead above his heart. His arms envelop her in return, and she nestles into his embrace. “Please, Jack... I have a right to know.”

She feels his muscles tense up a little; this is as close as she has ever dared to come to bringing up their time apart.

“Yeah,” he sighs. “You do.” He is silent for a while, his hands stroking her spine, his fingers running through her hair. “Remember... anything that happened before...?”

“Yep,” Nellie whispers. “Mollie needed help... and you told Will that you were going to get her.”

Jack nods a little.

“Then something got me, and I sort of checked out... but I know you were with me before...” Nellie sees something snap into place behind her eyes, and she clenches her fists. “That damned Leech.”

Jack flinches, as Nellie begins to tremble with rage in his arms.

“Was it him?” she snarls, using her better arm to shove Jack just far enough away from her for her to meet his guarded gaze. “Tell me.”

Jack opens his mouth, and Nellie narrows her eyes at him.

“Tell me!”

Jack shakes his head.

“I knew he was violent,” Nellie mutters to herself, glaring out at Indian River through that rain-battered rear window, “but I guess he never gave Athie a chance to see that side of him because he *likes* her so much!” She realigns her gaze with Jack’s and redoubles the ferocity of her glower. “What happened to Mollie?”

Jack almost seems to shrink away from her. “Sort of got launched out of that roof hatch in your JLTV... First glance... abrasions—contusions—all over her legs and arms... dislocated knee... Might have been a few bone fractures...”

“Shit,” Nellie mumbles, softening her tone just enough to evidence a legitimate concern for Mollie. “Injuries like that got to be more than enough to maim someone her age.”

Jack almost nods. “Not enough to end her life though... Scrapes and bruises and busted bones are laughing matters compared to shrapnel punctures and bullet wounds.”

Nellie feels her face heat up a little.

“You were losing a lot of blood, Nell,” Jack murmurs, “and she still had a strong pulse to keep her going.”

“But, according to him, you up and left Mollie over there to suffer and die in vain when you decided to check up on me before you started to mend her,” Nellie mutters back, “so, according

to him, you betrayed them—all of them—Leeches on Earth, Leeches on Mars—no better than being a damned ex-officer at that point... He do this before or after you three finished all of them off?”

Jack lowers his gaze. “Worst of it was after.”

“Figures,” Nellie mutters. She closes her eyes and returns her forehead to his chest. “You don’t have to tell me anymore... I don’t think I want to know.”

“Seems to me like you already do.”

There it is again—her initial maybe-mistake—another montage of crashes and burns flashing behind her eyes faster than strobe lights, memories haunting her like nightmares and ghosts—her own muddied past as vivid and clear as her now dismal present. Nellie chokes down a sickening accumulation of regret. “I never should have stopped to help them,” she thinks. “I should have just let them drown.”

But then she remembers that all of those Leeches had somehow influenced her reunion with Jack, and she grits her teeth. “I *hate* them!”

Then something snaps, and she cannot stop herself from sobbing until some sort of blood-depleted exhaustion conquers her mind and begins to lull her back to sleep.

. . . .

“Still fighting it?”

Nellie glances up from her .50 sniper rifle, greeting Jack with a smallish nod, as he climbs into their passenger seat, dropping his sweat-soaked and grease-stained t-shirt into a heap between his feet then removing each of his dark vision lenses.

“I figured you’d be out cold by now.”

Nellie drags her gaze away from his bare chest—still chiseled like marble in spite of his measly diet—and continues to inspect her bore. For a moment there, she is almost satisfied. Then she frowns at another clump of grime and stuffs a fresh patch down that filthy—stubborn—flipping... *‘Athie uses flipping, not me!’*

Nellie grits her teeth, chiding herself before ripping her bore rod out and glaring down at this patch—still not clean—then shoving her cleaning kit^{180,181} aside and smacking her face into her hands. She groans loud enough to warn Jack to keep his distance. Then she tries to take a deep breath—futile attempt to control her shaking and shivering and sour thinking now. “You done fixing up our motor yet?”

“Think so,” Jack utters, and Nellie almost feels her shoulders relax a little. “Transmission might still need some work though... We can test it all tomorrow.”

Nellie glares at him, as he stifles a yawn. “Or we can test it all now and be three-hundred miles away from those damned Leeches before sunrise! Because, according to that no-longer-a-launch-comm-unit-now-a-lame-excuse-for-a-timepiece on our dashboard, I was a hundred percent

¹⁸⁰ (Barrett, 2009)

¹⁸¹ (Barrett, 2016)

unconscious for close to forty consecutive hours. I'm good to drive until our hydrogen tank runs out!"

Jack settles into his sleeping spot and allows his eyelids to droop shut. "I want us to wait until tomorrow."

Nellie scoffs at him. "Why?!"

He is silent for a while... long enough to make her question whether or not he is even conscious now... Then he utters something that jolts her like a high-voltage shock.

"Because we might decide to go back."

Nellie stares at him for a moment—*back*. Then she shakes her head. "I would never."

Jack sort of smirks at something.

"Those Leeches can up and die with their damned space shit now for all I care!" Nellie snarls, clamping her fists around that rifle in her lap with enough force to strangle it. Then she snatches a fresh patch out of her cleaning kit, clips it to her bore rod, and shoves both into her rifle bore through its breech end.

"Never swear never, Nell," Jack murmurs, his voice thick with shades of sleep, his exhausted eyes open just wide enough to glimpse her next response.

Her entire being seems trapped in a sort of pause, but she is unable retain his gaze... Instead she glares down at her moonlit mechanical knees... silent... pensive... until she remembers to yank her bore rod out of her rifle and inspect this patch—clean—*finally*. She huffs, examining her bore, her chamber, her bolt once again before nodding with a sort of satisfaction, locking her bolt back into its carrier, and snapping both into place—done. She scrubs out her muzzle brake until that, too, is clean enough to shine beneath that cloud-obscured crescent moon. Then she loads ten fresh cartridges into her magazine, clips it back in place, double checks her safety—on—and stabs her rifle into their backseat.

"What the heck compelled you to even consider it?" she growls, hurling her cleaning kit back beside her rifle.

"They need us," Jack utters, a sort of rejuvenated strength in his voice in spite of its softness, "because we know how to handle Sembradores."

Nellie notices that his eyes are open now.

"I noticed a scouting troupe or something camped out on this side of Indian River while I was out hunting for parts... got close enough to listen in on their conversations at one point... For some reason, they got plans to get themselves to Mars, and they know something over at Kennedy is just about ready to launch right now."

Nellie shakes her head, sort of gaping at Jack.

"They're dead-set on going up in it at this point... They'll stop at nothing to get their hands on that crew module we made once they find out what it can do," Jack whispers, and Nellie almost—*almost*—succumbs to a temptation to care again, "which means... Mollie and Athie and Ben and... Bess... We got to warn them."

Nellie shudders with disgust—*them*. "No."

"Nell—"

“No, Jack,” she snarls, “not after what they did to us—We owe them nothing—least of all another rescue attempt! They got a couple dozen threat-detection radars and a whole damned army of robots with autonomous rifles at their disposal—They can save their own asses!”

Jack holds her vehement glower until she blinks and lowers her gaze. “They don’t have a chance without us,” he utters, and Nellie slams her fist into their passenger-side door.

“THEY’RE LEECHES!” she explodes. “THEY DON’T MATTER TO ME ANYMORE!”

Jack begins to shake his head.

“They take, and they take, and they take, and they give nothing back! And Mollie just goes on and on and on about how great and noble their stupid space shit is!” Nellie punches their door again. “THOSE LEECHES HAVEN’T MADE ANYTHING BETTER FOR ANYONE! LOOK AT US! LOOK AT EARTH!”

She fights back a surge of boiling-hot tears, as her fists and shoulders begin to quiver out of control. “Wasting away—too malnourished to even think straight anymore—too exhausted to drag ourselves out from one hell hole and not stumble right into another—too sick and tired of being alone and against this whole damned world all the time to let those damned Leeches struggle with their own damned problems! So we *helped* them! We saved their damned asses from a bunch of shit, and we discovered that message from Mars, and we fixed up all those damned robots with them, and we reconfigured that whole damned QuComm system for them!

“Then we let them hand over control to more Leeches on Mars; we let those robots go and tramp around Florida, raiding places to jack more shit and more fresh-picked edibility for this stupid mission, doing none-of-us-want-to-know what to all those people who challenged them; WE LET THOSE DAMNED LEECHES LAUNCH EVERYTHING INTO SPACE!

“And both of us just kept running around that damned space center, slaving over solutions to all of their damned problems, listening to our stomachs grumble louder and louder and louder—too scared to make them shut up because those same damned robots that would do anything—everything—to save a bunch of Leeches on Mars have done nothing but destroy people like us on Earth!” Then Nellie redirects her wrath towards Jack. “THEY HAVE DONE NOTHING TO THANK US—NOTHING TO RECIPROCATE! WILL BEAT YOU LIKE A DAMNED ANIMAL BEFORE HE DUMPED US OVER HERE, AND YOU ACT LIKE YOU STILL CARE ABOUT THEM ENOUGH TO WANT TO HELP THEM SURVIVE!”

Jack exhales, long and loud, holding Nellie’s smoldering glower.

“I WOULD RATHER HELP THESE SEMBRADORES SHOOT THEM DEAD!” she screams, and her words echo about their vehicle like a gunshot in a graveyard.

“Did you eat a full ration today?” Jack asks.

Nellie shuts her mouth, pressing her lips together for a moment, choking down guilt like a sudden urge to vomit. Then she grits her teeth; she had intended to break that promise with him all along. “No.”

“Nell—”

“We just... don’t have enough,” she whispers, squeezing her eyes shut. She feels another wave tears welling up within her, and she twists away—she hates to cry in front of him.

All of a sudden, his arms are around her, and her cheek is on his chest, and she is shaking all over—too hungry—too tired—too everything to control it now.

“Did you at least eat more than half of one?” he presses, stroking her hair—so gentle—so soothing—so...

She attempts to shake her head.

Something tells her that his face is crumpling with all sorts of disappointment now—in her—in himself—then she feels those stupid tears crash down on her face.

Jack reaches for something in their backseat, and she digs her fingernails into his arm.

“Stop.”

“Just take it,” he orders, removing her hand with much too much ease. “You need this now a heck of a lot more than I’m going to need it tomorrow.”

Nellie hears herself begin to sob.

“Please, Nell.”

His voice is softer now—gentle—like his hands.

“You got to believe that something out on Mars is going to help us someday... You got to believe that we might get a better future out of this. Otherwise all of us—even those friends of ours you call Leeches—are just going to die for nothing.”

Nellie somehow manages to meet his earnest gaze and allow herself to nibble at his half-ration.

“Not quite friends,” she mumbles.

Jack grins. “Not quite Leeches, either.”

[EARTH;; No Numbers for Value When It Comes to a Life]

Ben flicks on a flashlight—old-fashioned 2029 hand-heat-and-grip-strength powered LED model that his parents had given him along with his Rubik’s Cube—because he refuses to stick those awful dark-vision lenses on to his eyeballs. Then stark glass-and-steel walls and an expanse of deserted white-tiled floor within Cortex materialize around him. Something about its hushed vastness is comforting to him... maybe because no one else—no one dangerous—cares about it now. Except for a few more cracks in its windows and walls and a thin veneer of dust all over everything, it has not changed much since the ex-officer underground had blasted it 57 hours earlier.

Ben paces along an edge of the main testing floor—6 more strides then left—and veers into a stairwell that leads up to corporate office outposts and ink-on-paper-in-two-pocket-folder record rooms.

He returns to an open accounting log—bound ink-on-paper book with typed-up column labels and penned-in rows—on a touchscreen table in the CFO outpost and continues to absorb its contents into his mind—item descriptions, quantities, identification numbers, dates of purchase and acquisition, prices, account balances...

Apis mellifera zygotes 150 GEN14-26281 10/17/2044 1/08/2045 -- \$1,716,577

Ben stares at the entry, brow furrowed, head cocked left—species *mellifera* of genus *Apis* of family *Apidae* of order *Hymenoptera* of class *Insecta* of phylum *Arthropoda* of kingdom *Animalia*—type of honey bee^{182, 183} once bred on hive farms. He glances at the entry beneath it...

Lumbricus terrestris zygotes 150 GEN14-26282 10/17/2044 1/19/2045 -- \$1,279,663

Millions of dollars spent on fertilized eggs of honey bees and earthworms¹⁸⁴ by a company whose mission was to launch humans to Mars—makes no sense to him.

“Benjamin!”

Echo of frantic clomping in a stairwell.

“Benjamin!” Mollie cries again. “Come down here! Athie and William... outside... Now!”

Sensing panic—sign of something wrong—in her voice, he tears his eyes away from those entries and sprints towards her. He scrambles down stairs and dashes back across the main testing floor, as Mollie limp-walks after him. He flicks his flashlight off and bolts outside into a haze of wind-spiraled dust and sand and morning-just-before-sunrise blue. There is a sort of chaos—storm of rattled thoughts raging in his brain, tingle of dread coursing through his neurons, sprinting feet pounding on parched earth, salt-air gusting all around him. Something about it fills him with an urgent desire to run the other way, but Mollie is standing there, 14 strides behind him, keeled over in pain and shooing him closer to their Nellie-Car, closer to that pair of hunched-over and hobbling shadows.

“Mom!”

¹⁸² (Get Buzzing About Bees, 2016)

¹⁸³ (InsectIdentification.org, 2016)

¹⁸⁴ (Editors of Encyclopædia Britannica, 2016)

Mollie takes off running again, her cheeks all of a sudden whiter than moonlight—Athie never sounds all shaken-up-scared like that...

Ben yanks open their Nellie-Car trunk and pulls their bye-bye-blood box out—in case those dark stains all over Athie and Will are more than mud—and then he is stride-for-stride even with Mollie.

“Mom!” Athie whimpers, staggering another step forward. Her scraped and grime-coated legs, illuminated by a barely-there beam of sunlight, are threatening to collapse beneath her and Will.

On a more usual day, the promise of a sunrise meal—even another awful Nellie-Bar—would delight him to no end, but everything before him is spattered with blood, and just a glimpse of that much gleaming crimson is more than enough to sicken him and scare off his appetite.

“What happened?” Mollie gasps, half-speechless and half-shrieking with shock.

Athie opens her mouth, closes it, opens it again.

“Fucking wind,” Will slurs, unable to lift his blood-specked ashen forehead up off her shoulder.

Ben feels his stomach heave, and he shoves their bye-bye-blood box into Mollie’s quivering hands, pushes her closer to Athie and Will, and staggers off in another direction, both hands clapped over his mouth, head spinning like a spiraled spacecraft, esophagus already burning.

Blue—eyes open and glued to lightening sky—calm—10, 9, 8, 7, 6, 5, 4, 3, 2, 1—and that gross feeling begins to subside, as Ben ducks back into Cerebrum.

Flashlight on then fast-walk back to the CFO outpost, where those entries are still waiting for him to make sense of them.

Mollie joins him later, and he glances up from a series of three entries for goats—*Capra hircus*—Toggenburg breed for milk, Nubian breed for cream, and Pygora breed for fleece^{185,186}. The Sun is high enough now to illuminate the far corners of the room from floor to ceiling—he estimates 3 hours past sunrise—he has been too preoccupied to count.

“Hello,” he mumbles, evading her eyes.

“How are you doing?” she murmurs, her question sweet as apple juice and even more sincere... He can tell that she is hiding something.

Ben gestures to several towering stacks of reports and drawings and folders organized around him like planets in a solar system on pause. “Figured it out.”

“Figured what out?”

Ben pats that log. “Found doctor scrawl notes on page 77 about an alternate mission plan and figured it out—Genesis XIV was supposed to initialize a break-free phase on Mars if and only if resources on Earth had become too scare to support our settlement.”

Mollie blinks. “What?”

Ben points to each stack of papers in turn. “Plans for renovating all of our existing HAEUs to support arbitrary numbers of not just people, technical reports on advanced-manufacturing

¹⁸⁵ (Allen, 2015)

¹⁸⁶ (Miller, 2013)

spitter prototypes, designs for a space launch complex and an unsigned contract with Contour Crafting to construct it, provisions for an alternate crew and an alternate payload and—”

Mollie clamps her hands on his shoulders, and he swallows a well-justified urge to scream.

“We have been attempting to provide all 90 of them with a means to return to Earth this entire time!” she exclaims, her voice all of a sudden gruff and urgent. “What kinds of things were we supposed to send them last week?”

Ben shakes his head.

“Answer me with words!”

“What we sent them,” Ben squeaks, cowering away from Mollie, “because Andrew had asked us to send all of that.”

“Andrew had also requested to come home!” Mollie growls.

Ben sucks in a deep breath and aligns his gaze with her collar bone. “But none of them need to come home.”

Mollie is silent for a moment, and her face hardens with a different type of determination. “What are we supposed to be sending them now?”

“Zygotes,” Ben stammers. “Stored in vault 252 in Building 0—combination 014-002-500—with spit samples and design files for their gestation spaces and instructions for...”

Mollie contemplates something about him, about all of those papers, about that log.

“Did something mean to hurt Athie and Will back there, Mollie?” Ben whispers, a mirage of crimson flashing behind his eyes.

Mollie presses her lips together... Then she offers him a terse shake of her head. “Wind blew it into them.”

“So we have enough time to reload our rocket before T-Minus-0.”

Not a question.

Mollie stares at him, her gaze all of a sudden glued to his downcast eyelids.

“Because, in 2046, this mission was going to be the start of the end,” he continues, “so we have less than 72 hours to turn our payload into a goodbye-forever gift.”

Ben sort of sees a nod.

“Just... First... Give me some numbers, Ben,” Mollie stutters. “How much more was the alternate mission supposed to be worth to them compared to the original one?”

Ben sifts through row after row of numbers from that log in his head, summing up price entries from each page in turn until... He blinks. Then he shakes his head, as his shoulders rise up to meet his ears.

“What do you mean?” Mollie folds her arms across her chest and raises an eyebrow at him. Animal names—empty spaces in each price box.

He blinks again. “No numbers for value when it comes to a life,” he concludes, and, somehow, Mollie seems to understand.

“Vault 252?”

Ben nods.

“Let us see how much we can do for them before... before the Countdown ends.”

[EARTH;; Possible]

Athie sneaks back into LCC and hurries upstairs, beam-gun holster clipped to her belt loops. She closes that double-door to Firing Room 3 behind her and allows her artificial pupils to readjust to a lighter indoor version of pre-sunrise darkness—she sort of appreciates that giant window a little now that she can see through it when the sun is out... “Nothing better than blackness until the sun comes out though,” she mutters.

A pixelated image of the room soon appears within her mind, and she darts over to her QuComm terminal. She spots a single green QLED—standby—and a tingle of giddiness sprints down her spine.

‘Those ex-officer assholes didn’t manage to shut us down after all.’

She grins at that QLED and flicks a series of switches to power up her touchscreen interface. Then she enters a command to reinitiate connection to the PSC-DSN—Private Space Corporation Deep Space Network—a collaborative effort between several major space corporations, including First Mars, to develop their own system of antennas and satellites throughout the globe and across the solar system. Once operational, the PSC-DSN had taken all of three months to replace and render obsolete the NEN¹⁸⁷—Near Earth Network—and the DSN¹⁸⁸—Deep Space Network—both entities that had been created, maintained, and operated by U.S. government agencies until they became too overloaded with signals from non-NASA space junk and spacecraft to function. Enough of the PSC-DSN had somehow managed to survive the Collapse to enable a connection with Mars to be maintained here.

‘Lucky for us.’

She pokes her touchscreen again, opening the communications module. Then she flips the uplink switch on and begins to speak.

“Athie in again.”

She is too impatient-excited to wait for a response.

“Okay—Lots of updates from our end! First off, we had some unexpected visitors here a few days ago. Nothing important was damaged, but we decided to stop the Countdown so that we could finish getting everything ready before T minus zero. Second, we found incubators—four of them—all stocked up with fertilized eggs in a clean room inside Building 0. These were going to be scheduled to launch in 2046 with a four-person crew of geneticists-slash-microbiologists-slash-prenatal care specialists—in other words, people who could bring these beings to life. Anyway, Ben and Mollie are thinking that all of those eggs are frozen in a sort of amitotic state right now but that their reproductive genes can be reactivated once they enter a suitable womb-emulating environment. Point here is that all four of these incubators are going to replace those backup spitters you requested.”

She pauses for breath. “Think Noah’s Ark... We’re sending a digital copy of the Bible, too, so you can brush up on allusions in case that one makes no sense to you.”

¹⁸⁷ (Mercurio, 2015)

¹⁸⁸ (NASA Jet Propulsion Laboratory California Institute of Technology, 2016)

Athie flips the uplink switch off and presses the downlink switch on...

Waiting...

Thinking just how grateful she is for her too-useful-to-be-considered-lame, computer-generated, black-and-white vision... missing Jack... missing Nellie even more...

'He deserved to be smacked by that drone after what he did to them.' That drone though... She shivers, remembering that hair-raising hum—Will tackling her like a football player before firing that microgrenade launcher into complete darkness... once... twice—BANG—her own being jumping with fright, and that wind shrieking like Ben during one of his worst episodes, and those glowing bits of blasted spitter plastic and metal whipping around overhead... and, all of a sudden, Will screaming out louder than everything... She wonders just how much more time might pass before something worse arrives.

Then she smiles to herself a little, as Andrew's response begins to reverberate throughout the room.

"Andrew in... Is everything going okay with the launch? Because we need those spitters! And what do you mean 'Noah's Ark'? I was gonna tell you that we still want to come home!"

Athie exhales and sets her jaw—Press-Flip. "First Mars wanted you to have these incubators more, and, now, so do we—seems to us that their plan for 2046 was to enable your settlement to declare a sort of independence from Earth once things got kind of bad here, so they went through the trouble of preserving live animal zygotes—useful species to provide more foods and materials to you—and designing artificial wombs for each and every one of them just so future generations of people on Mars could raise animals someday... Crazy—I know... Anyway, each incubator contains at least two hundred different species in addition to a data disk loaded with design files and specs for spitter-generated wombs—specific to zygotes within that incubator. We're also sending a ChemE—spitter programmed with AI that identifies and performs whatever chemical reactions are required to make a given material based on which materials are provided to it—and we're sending small samples of all sorts of spit that you're going to need to make these wombs, so you should be able to just feed a spit sample to the ChemE and reproduce larger quantities of everything... But first you have to assemble the ChemE."

Flip-Press.

"Independence?!" Andrew replies. "You mean you expect us to just stay up here and survive long enough to turn Mars into some kind of substitute for Earth?"

"Um... Yes," Athie gulps, her fingers trembling over the downlink switch... Press... Flip... "Now that almost everything you need to sustain your settlement is in route, would it be *possible* for... for a bunch of complex, multicellular, Earth-born organisms to permanently inhabit Mars?"

Flip-Press.

Waiting... hoping... almost praying—in spite of the fact that she has never once set foot in any kind of religious institution ever in her life—until his response is stabbing at her eardrums and tearing open her heart.

“I thought—we all thought—that you were still going to send us stuff to build a shuttle or something that could bring us home after we made our decision.”

Athie takes a shaky breath... Press-Flip. “I guess all of us were just being stupid enough to hope that things might get a little better here before... But now...” She shakes her head. “You can choose to do whatever you want to do—Just keep in mind...”

Athie shuts her eyes, delving into her earliest memories in search of nothing more or less than a voice...

“Mars is our future, Athie,” it used to utter, each word brimming as much with passion as with excitement. “Space holds the secret to the survival of all life on Earth! See, Mars is said to be a dead planet¹⁸⁹, Earth, a dying one, so Mars is both our research laboratory and our experimental subject—a perfect place for all of us to learn how to save our dying home by first figuring out how to bring a dead one back to life!”

Athie repeats it, syllable for syllable, exactly as it has been engraved within her mind since before she knew she could remember... and, all of a sudden, she is back in Number 7, giggling and squealing and dancing around with her parents—both of them, not just Mollie—all celebrating news of another successful launch of Soon-To-Be-Martians from KSC... She blinks, fighting back those stupid tears again.

“My dad cherished this belief more than almost everything... He lost his life because of it, and I have *never* been able to live mine because people on Earth still look at me and see nothing but him!” Athie takes a deep breath and forces herself to continue. “For the longest time, I refused to share his ideals—I refused to believe that Mars was anything more than another failed experiment that Mollie and I were responsible for cleaning up... But now I *know* that he was right—he was right all along—Mars is our future...”

Athie stares at that lame, little, low-res image of Andrew on her touchscreen for a moment. Then she buries her face in her hands and forces her throat to swallow an awful urge to scream and sob all at once, as those words begin to sink into her own subconscious. *‘I guess this is goodbye...’*

She mulls over a final thought then turns away, no longer able to face her future—his future... *‘Might just be possible for us to join you out there someday.’* She closes her eyes, but all she manages to see within her mind are those words that she has not yet mustered enough strength to say.

‘Because there is nothing left on Earth right now that even has a chance to outlast what you can make on Mars.’

¹⁸⁹ (Clavin, 2015)

[earth;; Let's Go]

They drive until Merritt National Wildlife Refuge and pull onto the first beach. Farea gets out of one of the cars and follows Ursa and Kasha across the sand. The place is crowded; hundreds of people are roaming around, carrying boxes and making sure every vehicle is loaded and ready. She is reminded of books about war and historic battles; the idea of the fight that is to come scares her. Everyone seems to be busy, but Farea is casually walking by. She reaches the main plaza, and to her surprise she sees Arine directing orders to people. Farea runs towards her and gives her a huge hug.

Arine tears up a little bit. "And all this time... I thought you died..."

The hug lasts for a long time.

"You've been away for too long!" she exclaims.

"How long have I been out?" Farea asks candidly.

"You don't count your moons?"

Farea shrugs.

"A week, but you are now here for the launch!"

'Oh... the launch.'

"Hey... Listen..." Farea begins.

"No, listen to me. The launch is about to happen; we just need to..."

Suddenly, someone comes from behind and strikes Arine on the neck. She stumbles forwards, and Farea catches her before she falls. Almost losing consciousness, she looks up.

"What the..."

"LET'S GO BOYS!" Frose shouts in the air, brandishing his gun.

Arine gapes at him and glances at Farea. The fear glistening in her eyes is enough to show that she already understands what Farea wants her to know, but there is nothing she can do to stop him now.

"IT'S TIME FOR US TO CONQUER SPACE!"

[EARTH;; Out of Time]

Mollie grimaces, dragging her bad leg up another rung of her makeshift ladder—train-track of welded scrap metal strapped to cross-hatched support truss beneath their launch pad.

“Four more,” she gasps. “Four more, and then we are at the top.” She sighs, resting her head against a length of sun-heated aluminum. “Four more...”

Mollie glances up at their rocket—their magnum opus—their final gift to Mars... to their species... to all of Earth... assuming, that is, that everything goes according to plan.

Mollie closes her eyes and heaves a defeated sort of sigh. *I wish this stuff were more predictable.* Then she glares up at their rocket. “Understand something, okie? We have been slaving over this mission ever since we figured out that our List was a Stack, and now all of us are out of time.” Mollie grits her teeth. “So you better just blast off this gosh-darned planet when we tell you to go, and then you better make it out to Mars.”

Then she opens her eyes.

“Mollie!” William roars from somewhere below. “We got to move—our radars are picking up a fucking army out there now!”

Mollie looks down at her feet, seeing little more than a swirl of dust below.

“They got numbers and big-ass weapons and gunned-up drones and more cars than I care to count—We got three beam-guns and a beat-down vehicle with two flat tires!”

Mollie feels her stomach drop—not quite ideal conditions.

“Sooner we launch, sooner we leave,” Will grumbles. “Athie swears we got enough power to bring everything else in LCC back online and get this thing going now, so—”

“Almost done,” Mollie states, her voice as firm and steady as her insides feel skittish and scared. “Hold them off best you can—I need another ten minutes up here.”

“You’ve had almost six hours!” William shouts. “We need to launch this thing ASAP—before those drones buzz over here and blow it to pieces!”

Mollie grits her teeth and meets his disgruntled gaze. “Hold them off for another ten minutes, and, William, if you intend to help us succeed here, then you might just have to pick up one of Nellie’s sniper rifles once your beam-gun is overpowered.”

William glowers back at her.

“You can refuse to like her all you want, but you cannot refuse to take advantage of a more-than-decent mechanism of defense at our disposal just because she happened to create it—Understood?”

William nods and stalks away, leaving her clinging to her ladder, still four rungs below the top of their launch pad.

You can do it, Mol.

Her breath catches in her throat, as her father’s favorite phrase completes its first lap around her mind.

“Yeah, Mol, you can do it!”

Her three older brothers are echoing him; their voices seem to topple over one another, each scrambling to be the first to reach her ears... All of a sudden, she is three years old again, standing on top of a five-sided slab of rubber in Central Park, a navy blue batting helmet slumped over her eyes, a wooden stick clamped between her tiny hands.

“Okie,” she says.

“Ready, Mol?” her eldest brother, Sean, the pitcher, asks.

She pushes her father’s helmet up away from her nose and meets her brother’s eager gaze.

“Yeah!”

A baseball wobbles towards her, and her father’s hands guide her little arms and that long bat over home plate—whack!

“Run, Mol, run!” her father cheers, nudging her towards first base. “Leave the bat with me!”

She drops the bat and pushes her father’s helmet away from eyes again. Then she scurries down the base line as fast as her little legs can carry her, laughing and squealing all the while.

“Nice hit, Little Yankee!” her mother exclaims, clapping her hand, as she slides into first base, kicking up a little cloud of orange-tan dust. “Wade Boggs better watch out—keep blasting home runs like that, and he might lose his contract to you next season!”

“Keep up with the times, Donna,” her father jeers, and her mother loses her fun-and-games grin. “Boggs signed with Tampa two weeks ago!”

Mollie feels her bittersweet smile droop into a frown, as she hoists herself up on to the top of their launch pad and attempts to return to her feet. *‘Trey and I never had a chance to play stickball with Athie,’ she remembers, ‘even when we had a backyard and time enough to fool around...’*

Mollie shakes her head, limping closer to an open service module hatch in their rocket.

Chin up, kiddo. You did your best, and that’s all we’ve ever asked of you.

Her father’s voice again... Then a pat on her shoulder from her second-eldest brother, Douglas, the quarterback... And, just like that, she is six years old, pouting up at her father through a mask-like layer of mud, hot breath crawling out of her little pink nostrils.

“But I messed up,” she grumbles.

“We all messed up,” Douglas states, “but we still have time to make a comeback.”

Mollie attempts to nod. “Okie.”

“Go get Phil before he kicks so we don’t give up a field goal, too,” Douglas whispers, offering her an encouraging wink, as they line up across from Philip and Sean and her mother.

She narrows her eyes and digs her toes into the sopping ground.

“Hike!”

And the rest is a blur of legs and mud and a two-handed touch and a frumpy-faced Philip and a fist-pumping Douglas.

“And the Little Giant strikes again!” her mother laughs, scooping her up in an adoring embrace, as her father sprint towards the other end zone, football cradled in his right elbow, Sean racing like mad after him.

Mollie almost laughs. Then she feels an urge to cry. *‘We never... Athie...’*

She exhales, shaky and slow, pleading with her attention to return to their rocket. She peers through an open hatch in their service module, completing a final safety-and-sanity check on their propulsion and power systems⁶. She needs them to work—Mars needs them to work—because this payload is... everything... Six new spitters and more spit than she cares to think about; four incubators teeming with zygotes from more species than she has patience enough to count; seed packs for more kinds of fruits and vegetables and grains than she desires to eat; separate containers for small samples of silt, sand, clay, chalk, loam, mulch, and volcanic ash; one q-unit, and sixteen shrink-wrapped data disks loaded with videos, photographs, music, books, and as many other precious fragments of human history from all over Earth as she and Ben and Athie and William could manage to compress into binary bits and bytes...

Remember the good times, Mol.

Her father’s voice again—a murmur in her left ear... Then, all of a sudden, she is eight years old, curled up in a corner of a cold, barren, half-lit bedroom, her mother’s cell phone pressed to her ear, her three brothers slumping in a semicircle around her and rolling a soccer ball across hardwood floor planks between them.

“And don’t let the bad ones haunt you,” her father finishes.

“Okie,” she mumbles, fighting back tears.

“Mol, time’s up,” Philip, the goalkeeper, hisses, bowling their soccer ball into her chest and leaping to his feet. “We got to get to that CFC tryout on time.”

“Meaning twenty minutes early,” Douglas whispers, nudging Mollie with his shoulder. Philip gives him a look.

“He prefers twenty-five or thirty, Doug,” Sean states, and Douglas rolls his eyes.

“Which is why we got to go!” Philip exclaims, stomping towards the door.

Mollie nods. “Bye, Daddy...”

“Bye, Mol.”

“I love you.”

“I love you, too, kiddo.”

Click—and their conversation ends. Mollie slides her mother’s cell phone over to Sean and flicks a tear off her cheek. “Why did they go and get a divorce?” she grumbles, picking herself up off the floor. “I hate being this far from New York... Connecticut sucks.”

Her brothers nod in agreement.

“This house sucks, too,” Philip mutters, kicking at the door frame. “Let’s just hope this club doesn’t.”

Mollie slams the service module hatch shut and seals it closed. Then she continues to limp around their launch pad, analyzing the ceramic surface tiles¹⁹⁰ of their rocket. *‘I never even listened to a Red Bulls game with her... I know we caught a few Yankee games and more than a few Giants games before those radio stations all shut down... but... I doubt Athie even remembers them...’*

Mollie feels a stream of tears sliding down her cheeks; she wonders if Athie even remembers...

Trey.

All of a sudden, she is on her knees, sobbing harder than she has ever allowed herself to sob before, as more repressed memories than she can bear to recollect all at once begin to surge out of her subconscious and saturate her mind.

Trey—July 7, 2021—tall, built, tan—single balanced on his right shoulder, pair of sculling oars clutched in his left hand, Waco Rowing Club uni hugging his quads—sparkling blue eyes, like sunlight on water, and a charming sort of smile.

“First time out?”

Unintentional flutter of eyelashes— “Yeah.”

“Welcome.”

Trey—August 2, 2021—clean white lab coat and crisp black dress pants and shined up black leather shoes—same blue eyes, like sunlight on water, same smile.

“I know you.”

Unintentional blush— “Yeah.”

“Mol O’Briden—Right? You working on Genesis II?”

“Yeah—autonomous aspect—rovers and zero-gravity spitters and stuff.”

“Robots—Awesome.”

Timid nod— “You? Dr. Jennson?”

Different smile—humble—as if his pair of PhDs were supposed to be of little importance to her. “Call me Trey—I’m with the math geeks in the morning and the programmers in the afternoon... Join me for dinner at the boathouse after you finish your lift in the evening?”

¹⁹⁰ (National Aeronautics and Space Administration Lyndon B. Johnson Space Center, 2014)

Deeper blush— “This evening?”

“Yeah.”

“Um... Okie.”

“Awesome. Later, Mol!”

Flutter of excitement— “Later... Trey.”

Trey—March 14, 2022—deep blue bowtie and dress shirt matching his eyes—smudge of chocolate on his upper lip—his fork battling hers for a final bite of Boston Cream Pie, both of them giggling and shooting dare-you-to-do-it glances at one another until both forks all of a sudden claim equal half-bites—then his one knee down on Omni Parker House floor, and a black velvet ring box open in his palms.

Unintentional squeal behind her own shaking hands.

“Mol... Mollie O’Briden, first daughter of Seamus and Donna Grace, robotics genius from New York City, New York, with a PhD from Cambridge across the Pond not the River... Will you marry me?”

Nodding—speechless nodding— “Yes!”

Trey—March 15, 2022—midnight moonlight combing his dark chocolate locks—his bare chest warm and wonderful beneath hers and his crew-calloused hands stroking her spine, sending tingles down to her toes, beneath hotel-room sheets—her lips brushing his neck and her eyes glued to that glittering diamond on her left ring finger.

“Why Boston?”

He turns his head to meet her gaze and smiles— “Home-field advantage.”

Knowing nod— “I guess, after eight years at MIT, Boston would feel like your backyard.”

Then his lips meet hers, and she runs her fingers through his hair.

“And,” he murmurs, “I think I might have wet myself in New York.”

She laughs.

Trey—May 4, 2024—off-white collared shirt under a Han Solo vest above red side-striped blue trousers and knee-high black boots—same blue eyes, like sunlight on water, same smile.

“I do.”

Nervous-excited glance down at her white Leia dress, and then her eyes are locked with his until long after their priest ceases to question her— “I do.”

Then an exchange of titanium wedding bands—his fingers warm and trembling against hers, her fingers cool and comforting against his—then another kind of first kiss before their families and their closest friends beneath a gold and purple sunset on a beautiful Kauai beach.

Trey—August 21, 2024—ecstatic—anxious—frightened—apologetic—searching blue eyes and a hint of a smile drooping from his face.

“Mol...”

Her words trembling in time with her entire being, her cheeks stained with falling tears, her two fingers and her thumb pinching one end of that gosh-darned positive pregnancy test— “I just... I thought that parents were supposed to make this world a better place for their children... Think about what things are going to be like here in ten years—How could we possibly give a child a better life than ours?”

Mollie feels her heart sizzle in half like a tree just struck by lightning. ‘Athie... never...’

She is out of time for apologies, and she knows, deep down, that Athie has no reason to ever forgive her or Trey or all of those before them who had damaged Earth and never bothered to repair it—and she knows that she will never forgive herself for passing on this mess to Athie.

“Mom?”

Mollie gasps, her gaze aligning with a pair of troubled silver eyes—her eyes—Athie’s eyes. “I’m sorry!” she sobs, throwing her arms around her daughter and clutching her closer than she has ever needed to have her before. “I am so sorry...”

Then bullets are bombarding their buildings and their launch pad and their rocket, and Mollie finally notices that chaotic hell hole now worthy of being called a battlefield opening up like a rift between tectonic plates all around her.

[EARTH;; Right Back at Them]

“I can’t believe we’re doing this,” Nellie spits, slamming on their accelerator and glaring into the sinking sun.

Jack shrugs beside her. “I can.”

Nellie scoffs, and their speedometer swings another inch clockwise. “Twenty-nine miles from here to KSC—bring up that map so we can find this connection to 1.”

“Yeah.”

“Then climb back and help me organize our stockpile.”

Jack digs a data disk out of his pocket and connects it to their dashboard holo-projector. Then a road atlas from 2044—jacked from the Titusville Police Station along with almost everything in their back seat—appears across their windshield, and Jack begins to swipe his fingers across their touchscreen GUI, zooming in first on eastern Florida then on Merritt Island. The hologram flickers, and a new road map appears across their windshield. Nellie narrows her eyes at it, as Jack traces a route on their touchscreen from 95 to 1 to Kennedy Parkway.

“Look good to you?”

The hologram flickers again, and a black squiggle appears on their windshield between their current location and KSC.

“I’d rather stay on 95 a little longer,” Nellie replies. “Keeps us away from all of these houses and people and chaos in Titusville.”

Jack nods, a mischievous grin playing at his lips. “Something wrong with Titusville chaos?”

Nellie almost smiles. “We’ve already conquered it... and I’d rather not waste our winnings.”

Jack chuckles, sliding his fingers across their touchscreen. The hologram flickers once again, and a different black squiggle appears on their windshield.

“Perfect.”

Jack snorts.

“For now, at least,” Nellie adds, rolling her eyes at him.

Jack grins and pecks her cheek, and her stomach flutters. Then he steps between their driver seat and their passenger seat and plops down between a pile of graphene vests and helmets and a heap of semi-automatic handguns and rifles. “What are we starting with?”

“Armor,” Nellie states. “We jacked six graphene vests and six helmets from that police station.”

“Yeah—six of each.”

“Firearms,” Nellie continues. “Six of those .416 bolt-action rifles—”

“Yeah—”

“Twelve of those semi-automatic .38 handguns—”

“Um... Yeah—”

“And twelve of those nice .44s.”

Jack grins at her through their rearview mirror. “Yeah.”

“Ammunition,” Nellie goes on, allowing herself to smile a little. “Should be eight hand grenades—”

“Give me a second here... Yeah.”

Nellie raises an eyebrow at him. “You sure?”

“Yeah.”

“You positive?”

“You want me to count them up again?”

Nellie makes a face at him. “No—Should be five-hundred and forty .416 cartridges—”

Jack exhales. “Give me at least a minute for this one.”

Nellie nods, slamming on their accelerator again and speeding past some charred remains of a long-since overturned vehicle; she has seen one too many of those on this stretch of 95... Nellie shakes off a shiver. “Should also be four-hundred and thirty-two .38 cartridges and five-hundred and seventy-six .44 cartridges—”

Jack groans. “Make it more like five minutes for this one.”

Nellie nods again. “Will do.”

Then Jack gets quiet... Nellie tries to concentrate on that blackish stretch of barren road before her... just on that busted up and bumpy stretch of barren road... Then she huffs to herself and allows her voice to shatter that god-awful silence all around. “Why don’t you load up a few of those .44s while you’re at it—twelve rounds in each magazine?”

Jack does not attempt to respond. Nellie glances at him through their rearview mirror and grins at his concentration face—brow furrowed just enough to evoke that boyish sort of innocent wonder, eyes narrowed a little, lips twitching with each whispered count... She begins to wonder how he might have looked as a child.

“All here,” he sighs all of a sudden, catching her lavender eyes and causing her to blush a deep pinkish-red before she can return her attention to the road, “and divvied up for six.”

She hears a swift click-click and manages to nod. “Thanks...”

Another series of clinks and clicks—cartridges dropped into magazines, and magazines clipped on to guns—and then he slides two loaded .44 handguns into her lap. Nellie suppresses an urge to scoop up both of them at once. Instead, she wraps her right hand around one and fingers its grip, its safety, its trigger, and her entire being seems to relax.

“Try not to fall asleep now,” Jack jokes, climbing out of their back seat and plopping back down beside her.

“I’m up,” Nellie retorts, and her cheeks change in color from scarlet to crimson. She stuffs her new handgun into that holster on her right hip and sort of huffs up at that star-studded indigo sky.

“Butterflies and blushes again?” Jack murmurs, sliding so close to her that his lips are brushing her neck when he finishes his question.

“Yep,” she breathes, reminding herself to remain focused on the road.

Jack slips his arm around her waist and slides her other handgun into that holster on her left hip. Then he folds his arms across his chest and grins. “Guess I should behave until we stop.”

“Please,” Nellie grumbles, tightening her grip on their steering wheel. “Unless you want a corpse to kiss.”

Jack hangs his head, half-pouting, half-smiling as his boots, and attempts to resituate himself in their passenger seat.

Then Nellie takes a deep breath and narrows her eyes at the dark road—intuition seems to be telling her that Mollie and Athie and Ben need them now... So she pushes their little hydrogen-powered sedan until its frame begins to shake and tremble with exertion. No headlights and no roaring engine to announce their presence, and black-tinted windows to shroud their dashboard holo-projections, yet she senses a pursuer now—a fleet of pursuers—and she makes an effort to spur their sedan even faster.

“Load up one of those rifles,” she orders, and Jack launches himself back into motion. “We got company.”

Jack just about dives into their back seat. “Vests?” he inquires, snapping a magazine open and shoving .416 cartridges inside.

“Yep,” Nellie replies.

Jack takes a shaky breath. “Rules?”

“They shoot and miss, we leave them be,” Nellie states. “They shoot and hit, we take out their tires; they fail to back down, or they call in reserves, we blast them—hand grenade—one and done. This is all we got to bring into battle with us, so be sure to hit something good on every shot.”

Jack slips a graphene vest over his t-shirt, straps a loaded rifle across his chest, and clips a pair of hand grenades to his belt loops. Then he climbs back into their passenger seat and sets his jaw. “Got it.”

“Good,” Nellie replies, as Jack reaches back and grabs a second vest.

Stretch of straight road ahead—she locks their steering wheel between her knees and slides it over her tank top in one fluid motion. “Thanks,” she utters, returning her hands to ten and two.

Jack nods, as his fingers begin to fumble with that rifle, attempting to get at least somewhat acquainted before he fires his first shot. “I hate doing this to people... I hate that we have no choice but to do this to people.”

Nellie grasps his hand and squeezes it tight. “Only thing worse than knowing we got more blood to spill is knowing how much blood we got on us already... Weird thing is that all of them just look like people now—because Desperates stopped acting like people a long time ago.”

Jack closes his eyes, and Nellie presses her lips together. *‘Sometimes I wish I still remembered what innocence was like.’*

Light—all of a sudden glaring into her eyes, concealing two walls of electric vehicles now closing in from ahead and behind—silent motors and screeching tires—all of them racing towards her and Jack with their high-beams on—and, for a moment there, she is blind—Then she hears one of them—maybe even all of them—open fire.

“Shit!” Nellie exclaims, searching almost in vain for that exit ramp—231—Deering Parkway to Route 1—She cannot afford to miss it!

“Know what they’re trying hit us with?” Jack asks, glancing back at their rear window.

Nellie listens to all of those wasted bullets—busting up another patch of road, bouncing into their hubcaps, bombarding their rear bumper. But one perfect shot is more than enough to match a few hundred misses. She narrows her eyes a little... Then she nods. *‘Mom and Pat and I used to refurbish these, and then I would take them out back and test them in our soundproof range room...’*

Fire.

Scent of burning wood and plastic and textiles curling up her nose along with that plume of toxic black smoke and that cool October breeze.

“Kid ran in here!”

Clomp of boots and pounding of fists and firearms on her bedroom door—sirens blaring somewhere below—cursing and banging and more gunshots, even though Mom and Dad are already shot-up and dead on their own black-market-weapon-shop floor—honking and skidding tires beneath her—roar of flames and echoes of one last “I love you...”

Her own two real-people legs dangling out her bedroom window, twenty-two stories above rock-hard Detroit sidewalk, arms straining to support her seven-year-old being, hands clutching PVC frame, eyes searching for new handholds and footholds below.

Pat and Alex and little Blake and Bonnie live down on Floor Fifteen... She remembers how Mom and Dad had made her promise to go to them whenever Desperates came around; she had crossed her heart on it when she was only three, but, before tonight, none of those monsters had ever decided to come...

Nellie scowls at that glare reflecting off their windshield and their rearview mirror... None of those monsters have changed much since then.

“Sound like M240Bs¹⁹¹,” she replies. “Army machine guns—hundred rounds per bandoleer—gas-op, open-bolt action—fire up to nine-fifty rounds per minute—nothing to be afraid of.”

Jack gives her one of those looks.

“Just something to take into account,” she adds. Then she spots it—blacker void between black clusters of wilting trees—and she slams on their brakes, cutting their steering wheel—hard. Their little sedan skids around the turn, half threatening to flip off of its right wheels, half submitting to its challenge.

Blackness ahead, but, in spite of her night-vision lenses, she sees nothing, and, just as her eyes begins to adjust, another wave of glaring white light inundates her vision.

“Damn it!” Nellie growls, as bullets begin to smack their front bumper and smash into their windshield. She cuts their steering wheel again, swerving away from those oncoming vehicles,

¹⁹¹ (Military.com Network, 2015)

guiding their little sedan along a Brownian sort of zigzag in attempt to avoid real damage just a little longer.

CRACK!

Their windshield shatters, its fractured pane threatening to collapse upon her and Jack at any moment. She hears a soft click beside her, and she grits her teeth.

“Change of plans,” she growls. “Switch that safety back on, and blast the road... See where two hand grenades get us.”

Silence for a beat.

Then—click—Jack lowers his rifle and props himself up on his knees. “What do you want me to hit?”

Nellie glares into that blinding white glow—same straight ahead as it is behind—as a second onslaught of bullets begins to wreak havoc on their trunk door. “What can you see?”

Jack pulls a graphene helmet over his head, pries open their sunroof, and peeks outside. “Brights—just brights.”

“Shit,” Nellie grumbles to herself, cutting their wheel too hard and almost veering into a gnarled guard rail. “Pavement,” she gasps, regaining control. “Just hit pavement—yard or so ahead of their middlemost vehicles.”

Jack nods. Then he thrusts his entire torso outside, winds up, and pulls the pin...

Fire.

But, this time, all of Detroit seems to be up in flames, not just one apartment or one floor or one building.

Rush of cool air—her own real-people legs collapsing on cement, lungs gasping for oxygen—glimpse of their building, little more than a column of smoke and flames—her eight-year-old eyes gaping up at it, as something buckles inside, and all ninety-five stories crumple into a heap of rubble and ruin—Pat and Alex had mentioned something about a resource riot... Desperates raiding places to jack water and food... But this seems like more than a mission to survive—This seems like war...

Nellie shakes her head. *‘I used to hope that it would end, but it just keeps getting worse.’*

Another burst of gold and scarlet flames ahead, and a massive explosion of jagged black rubble and charging vehicles behind—shatter of glass—crunch of aluminum and carbon fiber—and all of those brights begin to fade, as that bombardment of bullets altogether stops.

Jack ducks back inside, tears off his helmet, and buries his face in his hands.

“That should hold them,” Nellie mutters, steering straight and crushing their accelerator beneath her artificial foot—in spite of their shattered windshield, she can see the road once again.

Jack glances into their rearview mirror and nods.

“For Mars,” Nellie whispers, grasping his hand. “For those few people who still got a shot at rising above all of this shit on Earth.”

Jack nods again... Nellie wishes that he would smile.

BANG!

“Shit!” she exclaims, as Jack raises his rifle and glares out their rear window.

BANG-BANG-BANG!

‘Further off now... Still too close for comfort though.’ Their little sedan swerves on to 95 North, and Nellie grimaces at their windshield. *‘Holo-projector is useless without a surface on which to project!’*

She flattens their accelerator against the floor, begging their vehicle to move even faster. “Come on!” she pleads. “Shift!” Part of her wants to punch their dashboard. “I swear we added a higher gear than this—took almost twelve hours for us to get it right, and I know we got it right! Come on, car—Shift!” Nellie strangles their steering wheel between her palms. “I hate this damned automatic transmission!”

Jack sort of chuckles. “I found you a manual.”

Nellie scoffs, veering right onto Kennedy Parkway. “It was Florida-sunshine yellow—stupid-looking convertible with a soft-top and zero storage space—and it was a hybrid!” She slams on their accelerator even harder than before.

“It worked,” Jack offers.

“So did this,” Nellie grumbles.

“With a little help,” Jack adds, and Nellie presses her lips together. He grins at her then glances down at their touchscreen at that map of Merritt Island that is supposed to be projected across their windshield right now.

“We close?” Nellie inquires.

His expression darkens a little. “We got a bridge coming up.”

Nellie gulps. “What are we crossing?”

“Canal... Haulover Canal.”

“I sure hope we got a bridge coming up!”

Jack nods.

Then something about that pitch black abyss up ahead compels her to reduce pressure on their accelerator... She holds her breath—someone else is out here. “I think we got a bridge,” she whispers, “because I know we got a guard.”

Jack tightens his grip on his rifle. “Rules?”

“Um...” Nellie scans the darkness again, and, just as her night-vision lenses pick up on more paved surface, something sludge-like splatters across their windshield.

“SHIT!” she roars, as all of that shattered glass collapses upon her and Jack. She slams on their brake, exchanging her grasp on their steering wheel for a grip on her two handguns—click—BANG—BANG—BANG!

A horrid cacophony of shrieking meets her ears, as her three closest targets crumple, clutching their knees and ankles.

“You with me, Jack?” Nellie barks, zeroing in on another shadow ahead of them.

“Yeah,” he croaks.

“Good,” she replies. “Drive.”

She fires her .44 again—single bullet this time—another Desperate down. Then she clambers into their back seat, snatching Jack’s rifle out of his lap, as he returns his helmet to his head and begins to shift over to their driver side.

CRACK-CRACK-CRACK!

Bullets shot from short-range semi-automatic rifles—a few more holes in their little sedan, but still not enough damage to break it down.

“Step on it!” she shouts—BANG—another Desperate down. She pulls a graphene helmet over her own head and settles into sniper position, propping up her rifle on their roof—right back at them now.

Screech of tires and more rifle shots—their little sedan taking off towards that bridge, Nellie exchanging no more than one bullet with each of her close-to-invisible targets—quick flash of fire between two trees is all she needs to spot a sniper at night.

Then a distant rumble—more like racing clunker cars than a morning-before-sunrise storm—reaches her ears, and she notices a speck of light reflected in their rearview mirror. “STEP!” she shrieks, and Jack pushes their little sedan to its limits.

Now everything seems to be threatening to rattle apart beneath them. Nellie struggles almost in vain to steady herself within their wide-open sunroof and pinpoint her next target, as a new sort of shell brushes their rear bumper and explodes like a microgrenade in the shoulder, spewing dirt and sand and molten rubble into their rear window.

Bridge—right there in front of them—beneath them now—then another shell landing just short of their rear tires and blasting holes through flesh and carbon fiber and road alike. Nellie crumples in pain and swallows a scream, as Jack jerks their wheel.

“Nell—”

“Fine!” she gasps, groping for a grip on his rifle. “Just get us across before this bridge collapses!”

Jack nods.

Then Nellie grits her teeth, begging her brain to ignore that gushing burn-gash in her right shoulder. “Fine...” she mutters to herself, as she feels their front tires return to stable ground. She raises Jack’s rifle, props it up on their roof, zeroes in on that shell-shooter, and fires—BANG—miss...

“Shit.”

“Nell—”

“FINE!” she roars, as that bridge snaps in two, separating them from all of those Desperates on foot and in clunker cars and—BOOM—another shell... Its blast strips off their rear bumper and shatters all that remains of their rear window, knocking Nellie’s bionic legs out from beneath her. She grits her teeth and swallows another sort of scream. “No more misses,” she growls, adjusting her grip on Jack’s rifle once again.

Then she hears an all-too-familiar hum, and she springs right back into action—.416 cartridges to refill that magazine—snap, some clinks, and snap—hand grenades—just in case

something bigger than a battle drone shows up. “Sembradores know that we made it,” she thinks... She wonders how many drones this group might have sacrificed to greet them.

“Sixteen miles from here to our launch pad,” Jack states, “about eight and half minutes at this speed.”

“Got it,” Nellie murmurs, scanning the skies... no windshield, open sunroof, no rear window, and a little less than half of their trunk door still attached—vulnerable—her duty to protect them... So she returns that rifle to their roof, hooks her finger around its trigger, and flicks its safety off.

More humming now—closer than before, and coming at them from all sides—CRACK—something smashing into her helmet—CRACK—something shattering their passenger side window—something slicing through her skin.

“Jack?” she gasps, desperately clinging to consciousness, just barely warding off pain.

“Fine,” he replies. “You?”

CRACK—her helmet again, and she forgets to respond. For a moment there, she is too caught up in quieting her own mind to concentrate. Then Jack screams about something up ahead, and she remembers Mars and Mollie and Athie and Ben, and, all of a sudden, this blood-curdling echo—massive explosion mixed with not-so-distant machine gun fire—snaps her out of it... *‘I sure hope we’re not too late.’*

Three of them—she counts just three of them—though only two seem to be firing at her and Jack right now—she can deal with three drones.

“No more misses,” she reminds herself, zeroing in on her first target, exhaling—long and slow—to regain control over her quivering hands, tensing her chest and arms to handle kickback...

BANG—CRACK!

One less drone circling like a vulture above, and one more broken window, this time on their driver side... *‘Makes us even more vulnerable now.’*

Nellie clears her mind again and begins to track her next target, glaring through her night-vision lenses at its spinning rotor blades and flashing guns. Then intuition tells her to fire—*now*—and she obeys. Less than a heartbeat later, her target is plummeting towards both of its counterparts.

Faint crunch of colliding spitter plastic before a loud smack into pavement—two birds killed with one stone—*done*.

Nellie somehow manages to lower herself back into their passenger seat. She takes a shaky breath and closes her eyes, not bothering to open them again until she feels their little sedan trip to a halt. Then she glances over at Jack. “Thanks for driving.”

He nods, still no-blink staring out their nonexistent windshield through his graphene helmet, still holding his breath, still clutching their steering wheel tight enough to turn his knuckles white. “Thanks... for... sniping.”

Nellie tries to smile. Instead, she grimaces and sort of whimpers in pain.

He meets her gaze, and, all of a sudden, he snaps into doctor-mode, popping open their glove-box and pulling his medical kit into his lap.

Nellie shuts her eyes, as that awful stench of isopropyl alcohol shoots up her nose.

“Only cleanser we have,” Jack apologizes, removing her helmet and slipping his fingers between hers. “Stings for a few seconds then stops.”

Nellie holds her breath and squeezes his hand... Then she swallows a scream—damned stuff burns like chemical fire!

Jack dabs that damp rag over her wounds again, and she groans aloud. “Almost done,” he murmurs.

She feels his fingers slip out from between hers and begin to wipe away more blood from her neck and shoulder. Another wave of burning pummels her mind, as that damned alcohol drips deeper down inside of her, and she clenches her fists and her jaw and her eyelids—Then Jack’s lips are locked together with hers, and her head is spinning, and her stomach is cartwheeling around in her abdomen, and her heart is threatening to leap out of her chest...

“Better?” Jack whispers, meeting her breathless gaze.

Nellie blushes. “Yep.”

Jack rolls something soft and gauze-like across her wounds then kisses her again. “I’m glad I’m not kissing a corpse.”

Nellie sort of smiles.

Next moment, something else out there is exploding into smoke and flame, close enough to shake their little sedan and jolt both of them back into action. She and Jack scramble to abandon their vehicle before something blasts it, shouldering those six rucksacks of graphene armor and firearms and ammunition from their back seat before sprinting towards LCC.

Her shoulder aches—a lot—and her stomach is sloshing towards vacuum-like empty, and those three loaded rucksacks on her back are only exacerbating her exhaustion—Then her gaze aligns with Athie’s, and her own problems no longer seem to matter.

Even though her face and neck are glistening with blood, and her shirt is damp with sweat and caked with dust, and her knees seem too weak to support her emaciated frame, Athie greets Nellie and Jack with a sort of smile.

“Back,” Nellie offers, “again.”

Athie throws her arms around Nellie’s neck, and Nellie gasps in pain.

“Thank-you!” Athie exclaims, squeezing even tighter.

Nellie sort of shoves her away right then and there and drops a rucksack at her feet. “Suit up.”

Athie peeks inside her rucksack and nods.

“Tell Mollie and Ben and... Will... that Jack and I brought more firearms,” Nellie orders. “Then give us a job to do.”

Athie nods again, whispering news of their return into her launch-comm earpiece. “Find Ben—he was supposed to meet me here a while ago now because we need him to re-program everything in Firing Room 3, but Mollie’s still stuck up on our launch pad, and Will’s been trying to get her down for hours—we’re ‘no go’ for launch until both of them are in the clear!”

Jack wraps his arms around Athie and holds her nice and tight until she figures out how to breathe again. “We can do that,” he murmurs, staring straight through her bionic bifocals into her tear-glazed eyes. “Promise.”

Athie snuffles a little and attempts to smile.

“I got Ben,” Nellie states.

Jack grins at her, and she darts away—he can deal with... *helping*... Will.

She listens to all of those explosions and gun shots and screams—Resurrects versus Sembradores—her own creations against goodness-knows what else, and she cannot tell which one has claimed a lead. She spots her JLTV amidst another flash of fire and smoke and scurries towards it—most sensible place for a little STEM-Head wreck like Ben to hide at a time like this.

And, all of a sudden, she is face to face with one of them—older fellow with deep brown eyes and a stupid-looking goatee—almost human, except for a death-black raven in a five-branch star...

Fire.

Sense of panic beginning to permeate her own mind now—nothing she can do to stop it.

Shrieking—lead two vehicles of their caravan already swallowed by smoke and scarlet flames—stench of burning composites and plastics—another car bursting apart right before her own gawking eyes—rush of heat—her Auntie Gene screaming, and her uncle cutting the steering wheel too hard, and the left two tires losing contact with the road—spinning—crunching of glass and carbon fiber and bone.

Pain.

“Nellie!”

Searing pain.

“Nellie!”

Her voice...

Branded not just into her mind, but into her entire being—bold and black and deep and blatant as a double amputation—right alongside all of those other hideous scars from more recent Ordeals—so much more than memories, so much worse than a recurring nightmare—inescapable—Sembradores.

Nellie is shaking all over now, both hands clamped around handguns aimed right between that old man’s eyes. Jack would have wanted her to hit something like his instep—drown him in pain but spare his life—Jack might have even convinced her to leave him be... But something like a lifetime of pent-up fear and anger and hatred is gnawing at her mind, tearing out chunks of her conscience, chewing up her abilities to rationalize and reason—something is compelling her fingers to tighten around those triggers, and nothing seems to want either one to stop.

“Monsters like you don’t deserve to live.”

His body crumples before her, and she knows that he is worse than dead.

Before she can even begin to comprehend what she has done, she hears a shriek—*Ben*—and she dashes towards her JLTV again. Then her bionics collide with something not quite solid, and she careens forward.

“Down here,” a smallish voice stutters, as Nellie crashes into grass and mud.

“Ben?” she gasps, whirling towards his cowering shadow.

“Here... Nellie?”

“Yep—Nellie,” she breathes. “You okay?”

She almost perceives a nod.

“Okay... Let’s go—Athie’s been waiting to bring you back up to Firing Room 3 for a while now, and she’s worried sick—Come on.” Nellie scoops Ben up and sets him back on his own two feet. Then she claps a graphene helmet over his head, shoves a loaded .44 into his hands, and yanks him towards LCC. “Come on!”

He stumbles along behind her, too shaken-up-scared to sprint.

BOOM—explosion of heat and sand and rubble tackles them onto wreckage-strewn ground.

“Shit,” Nellie coughs, pulling Ben up again before shoving him onwards.

He whines about something, but Nellie just nudges him harder.

“Go!” she barks. She zeros in on a shadow of a sniper rifle poking out of a clunker car and blasts it with a hand grenade. “We can all count bodies after liftoff,” she mutters. Then she sprints after Ben.

“Here he is, Athie!” Nellie shouts over everything, as Ben launches himself through a closing wall of Sembradores and all but dives head first into LCC. “Go get that rocket up to Mars!”

[Mars;; 14]

When Anikka connects to her avatar, it's on autopilot. All around there are sounds like cracks of thunder, tiny explosions. She can practically hear sparks and snaps, as the precious electrical equipment within her Resurrect is damaged beyond repair. Flashes of home come in and out of focus: The spider webs on the roof of her old apartment flit between her Simulation-generated sight of the bright Florida sky, as rockets and scaffolding become the decorations on those thin walls.

Her city, as large as it is, or used to be, has a sizeable amount of poor, disenfranchised, and homeless. From her window she remembers being able to see the monuments to industrial wonder, with sleek finishes and clean lines. But whenever she looked straight down, all she could see was broken bottles and fighting.

She's never been a fighter.

Since the beginning, she's always been a runner.

So she runs.

Looking around she can almost recognize the personalities of the avatars around her. That one is Andrew. Over there, she can almost feel Kirkpatrick's fatherly countenance radiating off the humanoid robot. There, against the wall is Leto, and right next to him is Sasha. People she's known for years surround her.

From the corner of her eye, she can see a fire. She hopes no one is in danger, and so do I.

She hears a loud clang, and looks down.

Another avatar, looking exactly like the rest.

But that simple, unadorned faceplate means a multitude to her.

She can almost see the friendly smile on his face, how he pats her head, how his laugh always shakes the air around him with baritones.

Desmond.

She can feel her chest palpitating, her mind shutting down, and when the whole world starts lurching the sides of her vision begins to pixilate.

[EARTH;; Not Okay]

BANG—BANG—BANG—BANG—BANG—BANG—BANG!

Shatter of drywall and plywood and glass, and skid of rubber soles on carpet, and pounding of combat boots down corridors and up stairs—8 seconds until he and Athie reach Firing Room 3, 6 seconds until those gunmen exit that stairwell—not enough time.

Ben feels a hand—Athie—shove him on, and he scrambles towards the door.

“Go!” Athie gasps behind him. “Get us off the ground!”

A single pair of shoes sprinting across the floor now—his shoes—because Athie has stopped—3 seconds until he reaches the door, 1 second until those gunmen exit the stairwell—not enough time!

BANG—BANG—ZAP—BANG—BANG—BANG!

Breathlessness and burning of legs and lungs—but their bullets are smashing into structure and bouncing up all around him, spurring him onward, and their grunts and screams and howls are battering his eardrums, assuring him that Athie is still alive.

He dives into the door and barrels into Firing Room 3—no light—because he has to restart all of those computers. Ben feels his stomach tumble around within his abdomen, as his fingers begin to claw at that electrical panel, struggling almost in vain to flip breaker switches into position. He knows not how much time he has before their guns enter Firing Room 3, so he begins to count up—then he hears those combat boots in motion again—not enough time!

Snap—1—snap—2—snap—3—lights.

Ben dashes over to a chair, activates a touchscreen desktop, and begins to slam his fingertips against it, spewing one command after another into their launch control system in attempt to fast-forward the Countdown.

Click-click.

Thumping of his heart—loud—tapping of his fingers—swift and soft—he knows that shadow in the door does not belong to Athie, and he feels a desperate urge to freeze, but he forces his fingers to fly across that touchscreen even faster—not enough t—

BANG!

Smash of bullet in flesh—his flesh—and pain—agony—terrible, awful, screaming pain...

“Get us up, Ben!”

Will... seems so far away...

BANG—BANG—BANG!

ZAP!

Something crumples—collapses like a canteen in a vacuum near the door.

“I got them, Ben!”

Athie... seems much closer than Will...

“I got them all... Ben—Ben!”

That screen begins to flicker before him—there then not there then there then not there then...

He is tucked tight in his rocket bed, and he hears his mother, humming, his father, murmuring more words from Ender's Game before wishing him goodnight—

He is seated in their work-from-home room, and he sees his mother, laughing, smiling, teaching him about orbital mechanics and jet propulsion then sharing a new space documentary with him on her home tablet, his father, thinking, typing, explaining another mathematical theorem and a new aspect of a programming language before starting up one of their favorite episodes of Star Trek on his work computer—

He feels a hand spread across his abdomen, and his entire being shudders in pain.

“Breathe, Ben, just breathe, okay?”

Athie... more words... more flickering... more pain... there then not there then there then not there at all...

“Not okay, Athie,” he croaks. “Not okay.”

[EARTH;; Ready or Not]

“Ben—stay with me now—Ben—come on—breathe—come on, Ben, please—BEN—PLEASE!”

Athie searches his eyes—half-open—empty—still and dull as stone—and she feels something shatter like glass within her.

“Ben...”

He almost seems to be holding her gaze, but she would rather see him look away...

Warm blood still pressing up against her shaking palms—but his chest is flat and frozen—panels flickering all around her and bullets exploding through windows and walls—and her trembling fingers reach up to touch his carotid artery... no pulse.

‘My fault... ‘because I dropped his vest back there.’

Athie retracts her blood-stained hands from his neck and stomach and buries her tear-streaked face behind them. *‘All my fault...’*

One sob—one long, loud sob—then she convinces herself to bite down and stand up; there is no more time for her to say goodbye right now.

She faces those control panels beside her—blur of blinking lights and flickering screens.

“BEN—NOW!” Will roars, his feet pounding across bullet-battered floor, approaching Firing Room 3.

Athie nods, chasing tears from her eyes with the backs of her wrists and ever so gingerly, lovingly, carefully nudging Ben’s feet off his chair and on to the floor. She slides into his seat and narrows her eyes at his code—quick fix here, quicker fix there—done—all she has to do now is enter a command to initiate launch.

Done.

She leaps up, sprints over to her QuComm terminal, and jams her fingers into that uplink switch.

“Ready or not, here she comes.”

She stares at all of those other screens... counting... just counting.

Ten—nine—eight—seven—six—five—four—three—two—one—and she hears their boosters rumble to life.

“We have liftoff,” she whispers, as all of LCC begins to quake and tremble around her. She glances towards that giant window—plume of greyish white smoke billowing up beneath their rocket, chasing it up, up, up, into a darkening black sky... There is a flash, as their first stage jettisons and drifts aside, and their rocket accelerates onward.

Then she notices their communications terminal blinking in her peripheral vision, and she snaps her attention back to the downlink switch... Press. She hears a curt response to her message—perhaps her final message to Mars:

“We’re ready now.”

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