



KNOW-HOW



JOËLLE BLOKHUIS.

Chapter 1

“You know I’ve wanted to do this all my life, Anne. I understand that you will miss me, as I will you, but we can keep in contact in many ways still. You always have Space-Calls with your parents, right?”

Anne gives me a look of reproach. I hate it when we talk about our study choices because she does not want me to study at the IU, the Interplanetary University of the United Nations. The University is mainly based on Earth still, but I want to go out. I’ve been to Mars a few times, but I want to see more. Anne’s parents work on Pluto and I would love to do that too. Explore the edges of where humans can go and go further. I’m interested in the habitats we are creating on the terrestrial planets. Since the various Space Agencies first visited the planets with humans, we have set up camps on the planets and even on the moons of Jupiter and Saturnus. And I really want to go.

Anne stays silent, while I’ve been dreaming off again. “Have your parents said they know any other relevant information I should dive into? Yesterday I was browsing ‘Astrobotany in gaseous environments.’ I wasn’t sure if I found anything relevant to store, though.”

“They said you should look into the geographical elements of one planet that you like, Nicky, so deeper instead of broader and especially how changes can be made to make the planets more hospitable.” She looks at me, her eyes checking my face, gauging my reaction. I try not to think about the subjects I could inspect to download later.

“Thanks, Anne.” I look back at her, wondering how I can cheer her up. I love Anne, but it is so difficult to see her hurt when I talk about university.

“You know I will still be on Earth for the largest part, if I do get in. And I could travel back and forth to the Nethislands in a day. I’ll still try to see you as much as possible.”

I look outside from the canteen windows. There is so much water. Since the people of the Netherlands knew the water level would rise too much for the dams and dikes to hold, they engineered floating islands that would rise with the rising sea level. They named the new country “Nethislands”. Some of the skyscrapers have been rebuilt so they still stand where they stood. The lower levels that would be underwater have been demolished and replaced by more constructive elements. The high school is on its own floatable element, so it’s surrounded by water.

Anne is happy here, but I know I can’t be. She is interested in history and culture. Both of us are incredibly curious and we have always gone exploring together, but I’ve always had an urge to go further. When I can see the stars through the skyglow I wish I could go closer. I want to see the rings of Saturn from a shuttle, and I want to touch the firm ground of the planets. I want to find out how we can live on the planets instead of having to go back after a year or two.

The bell rings, shattering my imagination. We have a class about hyperlinks coming up. All of school is based about finding the best information. Since about twenty years ago people are able to download knowledge. We can connect our brain to a chip we wear just behind our ears: KnowITs. The information on the chip can be immediately accessed and so we can store a lot of knowledge ourselves. Because of this, we don’t have to learn very much, as we know what we have installed on our KnowITs. The struggle is finding information that counts, that leads to new, interesting conclusions. That’s what me and all my classmates must do best to be accepted into the leading universities and IU is one of the strictest.

Chapter 2

Back home, after school I immediately open my *A/C*, an artificial intelligence computer that assists with searching. I start looking into the transformation of Venus to a planet we can live on. Although I want to go far away, Venus is my favourite planet. It can be visible to the naked eye, even in daytime. I always wonder how it would be, to stand, anchored on the planet. This is not possible yet, because there is no gravity. Scientists are working on creating something similar and I am intrigued by our human stubbornness to even try such things. I look at the camps that are set up, the tests they perform there and lose myself in the information. As I delve further and deeper, open document after document, I believe I've found some extremely interesting results, gravitational field and the possibility to use those in small bubbles. I save files to download tonight, so I'll have all the results at the ready. I imagine we could create domes with a set up gravitational field, with a hypothetical possibility and use those domes to create a habitat with liveable amounts of oxygen, water and gases. I'd need to find a way for that to work with the temperatures on Venus though, nowadays the camps are space stations attached to the surface of the planet and they have meters of isolation material.

Suddenly my Holophone rings. I answer and a hologram of Anne appears.

"I just found something terrifying", is the first thing she says.

She looks slightly bewildered, and I wonder what she must have found. *Aliens on a faraway planet is what pops up in my mind first.*

"Nicky, you remember that I had the trip to the Informatics Information Laboratories, right?"

"Yeah of course", I say quickly, remembering that she did say something about a trip she would take with her A.D. group, a group of human history students that do research projects of archaeology and documentation.

"Well, we went there in search of the reasons behind the development of self-storing and KnowITs. It was something that was never recorded very well, governmental regulation seems quite ambiguous and on the Web you can't easily find much information if you dig deeper than the big articles written in the time the KnowITs were developed."

She tells me how she found a document about with development information, in print. I go back to browsing while she continues talking, believing that she's happy with what she found. It does seem strange that there seem to be dead ends, but I don't have the time to wonder too much. I still need to find more information about liveable domes and temperature changes. I continue searching while she's draws on.

"The document refers to some others that aren't available anywhere. It talks about the accessibility of information and the different versions of what would become KnowITs."

Anne continues talking but I barely take it in. I believe I've found an information portal with loads of recent results about isolation and magnetic fields that haven't become very big inside the academic world, but that could lead to great conclusions when combined with what I already found.

"It seems terrible, right? That information that should be made public, has somehow stayed under the radar for so long."

"Hmm, yes. Very strange." I reply, absentmindedly.

“I’m going to look further tomorrow; I want to see if I can find some of the files that were mentioned. Will you come with me, Nicky?”

“You know I’m incredibly busy, Annie.” I reply, taking my eyes off my screen for a while to look her hologram in the eyes, “Next week is the application date and I still need to write a paper and prepare my speech.”

For both the paper and the speech we need the most recent, enlightening information. And we need it all stored because there will be so many questions. The universities want to know why you found what you found and why you thought it was relevant to store on our KnowITs.

Anne replies curtly: “Ok, that’s fine. I’ll see you tomorrow.”

Chapter 3

The next day in school I see Anne talking to Robin. He's one of her Human History classmates. They probably both went on the same trip yesterday. I suspect Anne likes him. She never mentions it though and I know she doesn't like me to pry in her love life, so I don't. We've got enough fuss between us as it is.

"Hi Anne, hi Robin. How was the trip yesterday?"

"I told you last night, Nick" Anne starts, slightly frustrated, while Robin mentions how strange it was.

"How was it strange? It's just finding out what was missing in the documentation about the company, right?" I remember Anne said something about that.

"Yes, but as I said, we found certain files that were never shared publicly. And they were supposed to be. It is mandatory for public companies to do so. The government obliges institutions to share documentation, so everybody can access their information. The companies can own the copyrights, but it should be available. Everybody should be able to review what is happening in big institutions."

Robin adds: "And not only that. It referred to many other documents that aren't available anywhere. They seem to receive no hits at all. As if some part of the Web is restricted, or even removed altogether."

I wonder how much I missed of what Anne told me yesterday. This is something big they've found. I feel a pang of guilt, for not having listened to Anne as I should have, but also for the fact that something illegal is happening under the radar. I feel doubt creeping in. I know Anne wants me to help her. I think it's the right thing to do. But it could be dangerous.

"If the companies don't want it public, they must somehow guard it, right? How dangerous is this going to be?"

"I don't know." Anne quickly responds. She looks at me hesitantly, while she is fidgeting with her blonde hair.

Robin is leaning against the wall and breaks his gaze away from Anne to look at me. He puts a step in our direction: "We can't not do anything about it. So we'll risk it. We have to." He sweeps his dark hair out of his eyes.

I know he's right. Anne does too. She stands up straight and looks at me decidedly: "Will you help us?"

I feel the doubt still clawing, trying to grip onto something, to come in deeper. I try to push it away. I close my eyes and make up my mind. "Yes, I will." I know I'll have to rush my application. I hope I haven't just closed that door.

I am just capable of not blurting out if it would be possible to start in a week.

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When I sit down for dinner with my parents, I'm torn between telling them I'm not going to apply how I wanted to and keeping it for myself. I pry my salmon with my fork and play around with my pasta.

"Nicole, are you feeling alright?" My dad gives me a confused look. "Are you nervous about the application, honey? Do you want me to take a look at your essay before you hand it in?"

"Hmm. I don't know." I reply. "It's a speech by the way. And an academic paper. But I think I'll manage."

I try to work away my food and put my plate in the dishwasher. "I'm going to work on my deadline", I say as I rush upstairs. I know my parents give each other a baffled look, as they always do when me or my brother don't tell them what's going on.

I start up my AIC and sit down. I'll have to do research into the company and store many files that are available to find missing links quickly. And therefore, I need to remove files I was searching for the application and my speech especially. I try to gulp away the lump in my throat. Guess I'll have to bluff through it next week.

Chapter 4

The office is empty. It is a wonder Anne and Robin were able to find the document somewhere, as it must have been the only thing that had been somehow forgotten. We're here after Robin picked us up in his motorboat. I had been delving through the Web for two nights and he and Anne had gone through the old tech lab already. We've even wondered if we should go scuba-diving to see if there is anything that has been left down in their old buildings. They haven't been demolished as they were monumental buildings. The small entrance building has been placed on an island. I believe it dates to 1800. That was where Anne and Robin found the document. The newer, taller buildings rise proudly out of the water, but as they haven't been in use lately, not much was done to make them waterproof. Now they're more of a monumental ruin. These buildings are not what they use for the KnowITs offices, but where the development happened 100 - 50 years back. The document Anne and Robin had found is 60 years old. Somehow there's been a hiatus in the development since 50 and 30 years ago.

"We have to find if they have anything underwater. There's nothing more here." Robin sounds a bit lost. What documents would still be intact below the water level?

"We can use my suits tomorrow" I suggest, trying to bring up our hopes.

It is a sunny Thursday night and to relax we decide getting some drinks at the Sail-Thru.

We find a place to moor the boat and walk onto one of the small park islands. At times like this I realise it is not so bad to be on Earth. I would miss Anne and my family if I'm in space all the time. But at the same time, I still know I loved the view from the Moon and from Phobos, one of the moons of Mars. I know I can't undo my choice to help find the documents, although we haven't gotten much further. We've found two folders tonight, but they don't seem to contain anything worthwhile. When I'm home I'll have to try and prepare my speech. It's first thing Monday morning and we'll be busy researching all weekend.

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Directly after school we take the bus to the old industrial neighbourhood. We see the ILL entrance building in the distance. Some of these buildings are still in use, but half was never lifted above water level. It is eerily quiet as we start pulling on the diving suits.

"If there was anything valuable here, they would guard they area better right? Maybe we've been looking in the wrong places." Robin mentions. I think I agree. But Anne quickly counters: "Let's not give up hope before we even start looking down there. If we haven't found anything by tonight, we can change our approach."

I jump in first and check if all my equipment is right. We decided to take my old suits that don't have any trackers installed. We've only got an outdated map that still uses GPS, but it shouldn't be traceable. As the others enter the water we go under. The ocean floor, what used to be the ground before the water came is only a few metres below us. I believe some 12 metres here. This used to be a polder, so it is lower.

Anne enters the building first. It is dark this deep, but we brought some good deep-sea lights. The entrance hall seems quite intact. The building is covered with some form of algae or seaweed, but I can imagine the way it had looked some years ago. We enter a hallway and check the rooms, but everything seems empty. How deeper we go, the more intact it seems. And then we find a completely furnished office. We share looks of amazement. A wooden chair drifts in the room and

a few drawers in the desk are opened. But the bookshelf is stacked to the brim and all the books are firmly kept in. We take as many with us as we can, trying to select on the use they could have. We quickly check the drawers and do a sweep of the other rooms, but we haven't found any other treasures.

When we come out of the water we can properly talk again. As soon as we've taken off our oxygen masks, we all start.

"How is the office...",

"Did you see the chair...",

"What do the books say...".

Out of surprise and bafflement we start laughing. Anne starts taking off her suit and says: "I think we need to let the books dry. Who know how far we can open them when they're less wet? I'm just surprised they're still all in one piece."

Robin suggests he'll take them home and, in the meantime, we'll research the titles and see what we can find. We take the bus back to the city centre and go home. We'll see each other on Monday afternoon and update one another in the weekend.

Anne stops me before I get on my bus: "Hey, thank you, Nick, and good luck with your speech on Monday." She looks at me before giving me a hug. "Thank you, Annie." I say, my nerves starting to kick in.

In the weekend I divide all my time between my speech and our research. I sent in my letter and paper earlier last week – they would have been much better, had I used my time for browsing and writing instead of helping Anne.

I find some relevant things in a few of the books that are available via the Web. The KnowITs used to have different names during the development and one book discusses a few different versions that seem to have been dropped in the development process. For most this was because the KnowITs prototypes were better, but for two, ExpandChips and Mushrooms there is very little documentation about why they stopped the development.

But my nerves keep showing up. I just don't know enough for the speech. It would have been great if we were able to have two KnowITs. We would be able to switch the available information whenever necessary. But that is highly illegal. The United Nations set a limit to keep it equal. The KnowITs we have all have the same storage amount and every person can have only one. Stealing them is barely possible as they have different fits, almost like fingerprints. Besides, they are traceable by the owner too.

But as I found, there possibly is a division in the KnowITs since the beginning. We're not sure if the Mushrooms and the ExpandChips are taken out of development for some obscure reason.

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I just finished my speech and I'm about to go to bed on Sunday night when my brother shows up in my room.

"I haven't seen you all week, you must be stressed out about the application." He says and sits down in my chair.

I decide to just tell him. I start with how hard I was working and then I mention what Anne found.

“I couldn’t do nothing, that wouldn’t be fair towards her but not to myself either. I’d feel terribly guilty, Erik.”

I realise I’m ranting off. I look at my brother and I believe he sees the lost look on my face.

He doesn’t seem to know how to start. “Well, you know there are always a lot more universities out there. You know how much I like Amsterdam University. Or maybe you can get in next year. And you don’t even know for sure that you’re not accepted. You’ll do your best tomorrow and you’ve done your best the last week. If you need any help with your research I can spare some time, just let me know, ‘kay Nick?”

I give him a hug before shooing him away. “I need to get my sleep to give a good speech, goodnight!”

Chapter 5

I got the news this morning. A letter from IU.

Nicola DeGroot,

The Interplanetary University of the United Nations has carefully considered your application and we regret to inform you that we will not be able to offer you admission to the class of 2030.

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Was I surprised? Not so much, after the last week of the application went up in smoke when I started out helping Anne and researching the documents.

Was I disappointed? Severely.

I saw the future I wanted and had planned for, slipping away like Euridice did when Orpheus glanced back. Fleeting, pulled away quickly, with no way for me to grasp it anymore.

I sunk to the floor and couldn't stop the tears from forming in my eyes. I felt them trickle down my cheeks, stick to my chin before they would eventually drop on my knees.

When my tears had dried, I called Anne. I needed somewhere to release my frustration. Before she could say anything, I started:

"It's all your fault. You know I would help you still, so you involved me. Instead of waiting for a week. A week is all I would need! A stupid, fucking week! Well you've got my stuck on Earth now. Does that make you happy?"

I screamed, ranting on and on. Not letting the small voice in the back of my mind say its part in how I fully chose for this myself and how I knew I had done the right thing either way. I hang up before she can reply.

Someone knocks on my door. I hope my parents didn't hear me. Erik opens the door and gives me a knowing look. He sits down next to me and opens his arms. I sink right in. I miss hugs from my brother. I used to call him Teddy when I was just a baby because he gives the best hugs. Now we're older we sometimes seem so apart. But here he is, just at the right time.

"How's the progress with your research?" He asks, and I know he does it to take my mind off the application. But in combination with his warm hug, it works.

"We found a lot. The KnowITs are definitely not created to be fair for everyone. We're unsure how exactly they are created differently, but it seems some are able to track their users and other are much bigger. There's definitely a big black market in the devices and it is completely under the radar."

I spend the entire afternoon researching together with my brother while we write up an article to send to a few media sites. The bigger mainstream channels, but also a few of the smaller companies, because we're not sure which companies might already know this.

Erik suddenly stops what he's doing and turns to look at me. "I think you should call Anne. She's worked on this as much as you and so has Robin. Discuss what they think and if they know more already." He doesn't even suggest me to apologise, because he knows I will when I'm ready to.

And he knows I can't stay mad at Anne for too long. So I pick up my Hphone. Anne picks up and stays silent.

"I'm sorry Annie," I say, and I start crying again. I hate how I can never say anything that makes me emotional without crying. I feel it makes the situation much fussier than it already is.

"I'm so sorry for yelling at you. It was my own choice to help you and I wouldn't have done it any different, looking back. I had so much fun with you and Robin and I was, and am still, honestly, bummed out that IU didn't accept me. I just wanted to say,"

But she interrupts me before I can add anything else: "I know Nick and I understand. I'd hate it if you pulled me away from all my family to help you in space, just because you wanted me out there. But I would do it if you needed it and especially if you were out doing something good. That's what friends are for. I just want you to know that before you say anything else. I'll come over and we can watch a good movie, if you want me too?"

I nod and continue, "Yeah, I'd like that. Then we can check this article me and Eric were just writing. Maybe we should send it to Robin too. I think the news would have a field day."

Anne comes over and we do just that. We send the article after some additions from Robin and some editing and then we put on a romcom.

Anne mentions something about Robin and her having a date tomorrow, but after all my hard work and my sadness I'm too tired to take it in, as I doze off.

Chapter 6

Since we sent out the article last week we've been called on and off by journalists. The three of us are barely able to go to school and back home without being intercepted by a journalist or more. We've given a few collective interviews and tried hard to continue our research. We've decided to hand it over to a renowned research agency and they've offered us jobs too. I declined, I liked it as long as it lasted but it still is not what I want for myself in the long run. Robin is still thinking about it and Anne accepted. I'm glad that at least one of us gets to do something she's good at and has wanted to do since forever.

Robin was sure IU will come back to me with an offer when they realise my application wasn't as good as it could be due to my involvement in the KnowITs research. We've taken ours off the week before publishing the first articles, and now most people have done the same. We might use them again when there is more clarity about what they track and how equal they are.

And Robin might have been right. I got a letter from IU asking me to come by for a chat with the dean of the IU faculty of Space Habitats. So we'll see about that.

Robin and Anne have had a few dates too. I haven't slept on the rest of the information Anne gave me. But that story is not mine to tell.