

THE TEMPORAL VIEWER

IMAGINE WATCHING HISTORY



MOISES DAVIDESCU

Characters

In California

Dr Jay Davies. Quantum physicist at Gladwell Research.

Erwin. Jay's cat.

Dr Jefferson Hill (Jeff). Emeritus professor at Stanford, Jay's mentor.

Rashid Lamrani. Lab technician and engineer at Gladwell Research.

Dr Marvin Caswell. Head of Jay's division at Gladwell Research.

Amanda Gladwell. Owner and head of Gladwell Research.

Maksym Belenko. Owner of a truck garage, a former army captain from Krakughystan.

Maria Karpova. Maksym's wife.

Claire and Mark Davies. Jay's parents.

Grace and Carla Hill. Hill's wife and daughter.

In France

Dr Yvonne Lefèvre. Physicist at the museums laboratory under the Louvre.

Alain. Yvonne's brother.

Dennis Laurent. Software entrepreneur, patron of Yvonne's laboratory.

Capitaine François Leclercq. French criminal investigation police officer.

Lynette Leclercq. Police officer, Leclercq's wife.

Marie Dubois. President of the French Republic.

From further away

Special Agent Liz Ortega. FBI agent.

Horatio Davenport. FBI agent.

Mabinti M'Beke. Secretary-General of the United Nations.

Colonel Anatoliy Kushnir. Officer of the army of Krakughystan.

Taras. A man from Maksym's old army unit.

From the past

Dr Natoshi Sakamoto. Engineer at Xerox PARC.

Laura and Greg Sakamoto. Natoshi's wife and son.

Driss Lamrani. Rashid's grandfather.

Uncle Fred. Jay's uncle.

Prologue

A Note on This Edition

I first published *The Temporal Viewer* in 2022. Readers enjoyed the story, but some told me the characters needed more depth and the writing needed polish. They were right. English is not my first language, and I always imagined this book as a film, so I wrote it in scenes, almost like a movie script.

For this edition I worked with Claude, an AI system made by Anthropic. At first, scene by scene, Claude revised my text, and I reviewed every change. Then I went further. I gave Claude free rein to rewrite the whole novel as a page-turner, keeping my idea, my characters and my world. Claude proposed new turns in the story and wrote most of the text you are about to read. I read every scene, asked for changes, rejected what did not fit, and approved what did.

The original idea, the characters and the world of this book are mine. Much of the plot and most of the words in this edition were written by an AI, under my direction. The cover image was also made with the help of AI.

I am telling you this before you start, because if I were the reader, I would want to know.

This novel is dedicated to my wife and two sons.

Moises Davidescu

October 16-2026

Scene I

Erwin the cat reached the door before it had finished opening.

My bowl is empty, Erwin thought. My water bowl is dry. My litter box stinks. I am named after Erwin Schrödinger, a great scientist. I expect respect and attention, and tonight I am owed a great deal.

What is this human thinking? His duties are simple. Feed me. Entertain me. When will this monkey understand? I do not belong to him. He works for me.

Then the door slammed.

Erwin was under the table before he had decided to move.

He watched from there. The man stood in the hallway much longer than anybody needs to stand in his own hallway. His shirt had come loose on one side. He was still holding his keys, and he was holding them too hard.

At last he went to the cupboard and filled the bowl. He did it before he took his coat off and before he turned on a light. He always did. *I trained him in four days, Erwin thought. The great work of my life.*

“There you go, Beast,” the man said.

The voice came out wrong. Thin, and too bright.

Erwin came out and ate anyway.

Behind him the refrigerator opened. A bottle. A glass. Then the sound of beer hitting the counter instead of the glass, because the man’s hand would not hold still. He tried again. Half of it ran off the edge and onto the floor.

The glass hit the tiles and burst.

Erwin was gone before the pieces had stopped moving. From between the chair legs he watched the man pick the bottle up off the counter and drink from it standing, in the dark, with the refrigerator still open behind him.

After a while the man came past the table, and Erwin smelled him properly for the first time that evening.

Sweat, and under the sweat something else. Erwin knew it well. He had smelled it on cats in the street, in the last second before they ran. He had never smelled it on a human being.

He is afraid, Erwin thought.

Erwin stayed under the table.

Scene 2

After a while Erwin's whiskers came round the leg of the table, followed, at a cautious interval, by the rest of Erwin.

The glass had been swept up. The bowl was full. He jumped onto Jay's lap, turned twice and began the evening's grooming, purring loudly. *Let the primate remember who is in charge*, Erwin thought.

Jay put a hand on the warm back and left it there. Between the cat and the beer his hands had nearly stopped shaking.

Nearly.

He shut his eyes and went back to the lab, because there was nowhere else to go.

It had started that morning, with the box under his arm on the bus. For one day he had wanted to work on a problem nobody was paying him to solve.

He had kept the box for seventeen years. His father had found it in the back of a thrift store in Palo Alto on a Saturday, between a rice cooker and a box of tangled cables. The label said UNKNOWN DEVICE, NOT WORKING. \$4.99.

Mark Davies had turned it over and grinned. "Four ninety-nine to find out what it is," he said. "That's cheap for a question."

Jay was fifteen. He paid with his own money, because his father insisted on it.

It was a homemade black box, built by hand by somebody working evenings: a lid held down by four screws, a power switch, an indicator light, and two round openings on opposite faces. Inside, held in a rough blob of grey metal, was a sphere the size of a plum.

The sphere was black in a way nothing else is black. Dull, like velvet, and it gave back no light at all. Physicists have a name for a perfect black, something that swallows every bit of light that falls on it: a black body. It exists only on paper. Nothing real is that black.

For seventeen years he had flipped the switch, and the red light had come on, and nothing else had happened.

This time he had a laboratory.

He lined up one of his research lasers with one of the openings and fired it at the sphere. Any reflection at all would tell him something about the material.

Nothing came back. He walked the beam through every colour, red to violet, and past violet into the ultraviolet. Nothing.

So he started raising the power.

At three and a half watts the sphere answered.

Jay was under the bench with his arms over his head before he understood that there had been no bang and no crack and no smell of anything burning.

He lifted his head and looked.

A beam had come out of the far opening, thin as a pencil lead, its colours turning slowly around each other like the striped pole outside an old barbershop. It crossed the bench and ended on his coffee cup.

And it was straight.

He had spent ten years around lasers, and he saw at once what was wrong with it. Light spreads. Every beam widens as it travels. This one arrived at the cup at exactly the width it had started.

“What the hell,” Jay said, to nobody.

Then he looked above the cup.

Floating in the air over it was the laboratory.

A small one, a foot across, hanging in nothing and lit from inside. The bench. The shelves. The door. And a man at the bench with his arms over his head. Him. Frozen in mid-duck, four seconds ago.

Underneath it two wheels of light turned slowly in the air, bouncing gently like corks on water. Beside each one was a small display showing a date and a time, counting in milliseconds.

Jay moved a finger towards the nearer wheel. The wheel stopped bouncing and waited.

He reached in and took it.

It stuck to his palm. Not gripped, not held. Simply his. He turned it the other way.

The little world ran backwards.

The tiny Jay stood up out of his crouch, walked backwards to the bench, picked up the cup and carried it out of the room. The date on the display unwound.

And there was sound. Thin, tinny, running backwards, but sound.

He turned the wheel forward. Everything rushed ahead and stopped dead at the moment the beam had touched the cup, and would go no further.

He took the second wheel with his left hand. After that it was like learning to swim. With both hands on, the whole scene followed them. Hands apart and the world grew. Hands together and it shrank. Turn a wheel and time ran, fast or slow, depending on how hard he spun it.

He spun the left wheel back and held it there.

The days went past and he could see them going. The light in the little room brightened and died, brightened and died. Voices ran by in a chipmunk choir.

Something big went past in the blur. He backed up until he found it, and Jay was looking up into his own face.

It filled the picture edge to edge. A jaw the size of the bench. An eye he could have put both hands into, looking down at him.

No beard. He had shaved it off in March and grown it back in April.

Four months ago he had picked up that cup, and the cup had been looking straight up at him, and it had kept it.

He went on going back. The date fell through a year, and another year, and then the picture changed completely. Long rows of white shapes. A moving belt. The hard noise of machinery. The cup, one of thousands.

The factory.

The date stopped three years and two months back and would go no further. Before that there was nothing to see, because before that there had been no cup.

He photographed everything: the laser settings, the angle, the position of the cup on the bench. Then he switched the box off.

The wheels vanished. The beam did not. He switched the laser off. The beam stayed exactly where it was, lying across his bench, turning.

That was when the panic came. He swept the laser up and down the colours at random, flicking the shutter open and shut, looking for anything at all.

For half a second something else hung in the air above the bench. Not the laboratory. A spiral of small blue points, turning slowly, like water going down a drain.

Then it was gone.

At infrared the beam went out. All at once, and the world above the cup with it.

Jay sat down on the floor.

Now, on the sofa, with Erwin asleep on his chest, he put it together one piece at a time, the way he would have written it on a board.

The picture shows what the cup has seen, from the exact point where the beam touches it, with sound. It goes back to the day the cup was made, and no further.

So the cup has been recording. Not since this morning. Since the factory. Everything it has been near.

The box's own power supply does not make the beam. It only makes the wheels and the displays. Seventeen years of flipping a switch on a machine that was waiting for a laser.

And the displays were in English. Somebody had cut the openings, wired the switch and taught the thing to count in milliseconds.

And then there was the part he had been avoiding all evening. Once the beam was lit, it burned on, drawing on nothing he could find. Energy has to come from somewhere. Jay had spent his working life being certain of that.

And the spiral. The blue points that had not come from the cup or from anything in the room.

I was flicking the shutter, he thought. On, off, on. And it showed me something else.

"So objects have memory," he said to the ceiling, and it sounded exactly as mad as he had expected. "And the ball has something to say."

He reached for his phone and found his father's name, and his thumb stayed on it.

Four ninety-nine to find out what it is.

He put the phone face down on the table and did not sleep.

Scene 3

At ten past six in the morning Jay Davies was the only person in the building, which was how he liked it.

He had run six miles and been at the bench since half past five. The lab was long and cold and full of equipment that cost more than his parents' house, and along the far wall, behind a steel door, stood the refrigeration plant that kept the chips a fraction of a degree above absolute zero.

That door was the problem.

An ordinary computer works with bits, each one a zero or a one. A quantum computer works with qubits, which can hold both at once, and that lets it try every possible answer together. But the smallest heat or vibration spoils a qubit, so every serious quantum computer on Earth sits at the bottom of a refrigerator the size of a wardrobe.

Gladwell Research wanted one that worked at room temperature. It could sit on a desk. It could break the encryption that guards every bank transfer and every military message, and whoever built it first would own the field.

Jay had been hired out of Stanford six years ago to get there first.

He had not got there. What he had was a warm qubit that held for a few millionths of a second, nineteen per cent longer than the man before him had managed.

"Anything?"

Caswell was in the doorway. He had a way of arriving without footsteps and standing exactly on the threshold, so that he was never quite in the room.

"Nineteen per cent," Jay said, without turning round.

Dr Marvin Caswell was sixty, neat, and wore a University of Virginia ring that he turned on his finger when he was making a point. He was turning it now.

"There was an announcement on Tuesday," he said. "Four thousand qubits. Four thousand, Davies. And you have a few millionths of a second."

Jay turned round. "How cold do they keep them?"

Caswell said nothing.

"Fifteen thousandths of a degree above the bottom of the universe," Jay said. "Most of that machine is refrigerator. You can have a million qubits. If they collapse before the calculation finishes, you own a very expensive fridge."

"Amanda asks me about this laboratory," Caswell said, as if Jay had not spoken. "Once a month. She asks me what we have." He looked around at the benches and the six years. "I would like to have something to tell her."

Then he was gone.

Jay stood in the hum of the refrigeration plant.

His father had been the better physicist. Everyone in the family knew it and nobody said it. Mark Davies gave up research at thirty-one because there were three children and no money in it, and he taught Newton's laws to fifteen-year-olds for the next thirty years.

So Jay had the career his father put down, and six years of nineteen per cent to show for it.

Amanda Gladwell reviewed the laboratories in March. Four hundred thousand dollars a year. Jay had written enough of those reviews for other people's projects to know how the sentence went.

He had until March.

His hands were flat on the edge of the optical table. He noticed them there, and took them off.

Scene 4

At two in the morning Jay was still on the sofa, with the cat asleep on his chest and the box on the coffee table where he could see it.

He was thirty-two and he lived alone with a cat.

His sister asked about that twice a year, with the delicacy of a woman driving a truck through a wall, and he had a set of answers ready. A doctorate takes everything you have. Erwin is high maintenance. There is time. They were all true and none of them was the reason, and Julia knew it.

The reason was Monique Thornton.

She was sixteen and the most beautiful girl in the class, and Jay spent four months building up to a question that took eleven seconds to ask. She said yes. His mother lent him the car. He spent every dollar he had on a restaurant with cloth napkins, and he was funny that night, properly funny, and she laughed.

On the third date he kissed her. On the fifth she had a cold.

They were in the car. He leaned in, and she turned her face away. "Can't you see I've got a cold?"

And Jay, sixteen and entirely certain that love conquered viruses, said: "I don't care."

She looked at him for a moment. "You're so selfish," she said, and got out of the car.

Two years later he found out the rest, from somebody who assumed he already knew. Monique had a boyfriend. They had fought three weeks before Jay ever spoke to her, and she needed to be seen laughing in a restaurant with somebody else. By the fifth date the boyfriend was back, and she needed it to be over in a way that was not her fault.

Jay had handed her the reason himself, wrapped, with a bow on it.

After that he examined his own motives before he acted on them, and when he could not tell whether a thing was for the other person or for himself, he said nothing and went back to work. Three women in twelve years had taken it for indifference and left.

Not everything from back then was wreckage.

When he was nine his father took him into the empty school chemistry lab on a Saturday and turned a laser on in the dark, and Jay saw the beam standing in the air, a solid red line he could put his hand through. He decided then what he was going to do, the way children decide, permanently and all at once.

And there was the sodium.

At fifteen he had read what sodium does to water, and reading it was not enough. He borrowed a quantity from the school lab, in hindsight an insane quantity, and took it into the boys' bathroom to have a proper look.

He was still having his proper look when Mr Barkley, the principal, walked in.

Something older and faster than Jay took the controls, and it made a decision: destroy the evidence. He threw the sodium into the toilet, flushed, and ran.

The explosion did not kill Mr Barkley, which was still the luckiest fact of Jay's life. It did remove the toilet, in pieces, at speed.

He was suspended for two weeks and spent the next two summers working off the damage as his father's unpaid lab assistant. He took two rules out of it and had kept them ever since.

Never run an experiment before you understand the science underneath it.

Always know your way out of the room.

The cat breathed on his chest. The box sat on the table. Four dollars and ninety-nine cents.

Jay looked at it for a long time in the dark.

Scene 5

At seven the next morning the cup was gone.

Jay stood at the optical table and looked at the empty ring of dust where it had been. He had photographed it at midnight and walked out and left it there, because it had not occurred to him that anything in the world would touch it.

The cleaners came through at five.

He went down the corridor faster than he wanted to be seen going, into the little kitchen the floor shared, and there on the drying rack were eleven white mugs. The company had bought four hundred of them years ago. They were in every kitchen in the building.

In one of them was every word spoken at his bench since March, and somebody had run it under a tap and put it on a rack with ten others.

He opened the photograph from midnight and made it bigger with two fingers. There was a chip on the handle, near the base, the size of a grain of rice.

The fourth mug had it.

He dried it on his shirt and put it in his bag beside the box, and stood there with his heart going, because he had nearly lost the most valuable object on Earth to a man with a trolley.

Rashid Lamrani was on the floor under the far bench with his legs sticking out and a flashlight in his teeth.

"That one's dead," Jay said. "It's been dead since June."

"I know."

"So why are you fixing it?"

"Because it is not dead," Rashid said, from under the bench. "It has one wrong part. Everything broken has one wrong part. When you find it, the thing was never broken." He slid out and held up a small grey cylinder. "A capacitor. Ninety cents."

"On a four-hundred-thousand-dollar instrument."

"Ninety cents," Rashid agreed, and looked pleased about it.

He was twenty-eight, the lab technician, three years at Gladwell, and he had never once asked for a project.

"If a thing did something it could not do," Jay said, "not unlikely, not difficult, but not possible, what would you look at first?"

Rashid thought about it properly, for about four seconds, which was three and a half seconds longer than anybody else in that building would have given it.

"The word possible," he said. "People say it as though it means according to what is. It means according to what I know."

Then he nodded at the canvas bag on Jay's shoulder, with a corner of black casing showing at the top.

"What is in the bag, Dr Davies?"

Jay's hand had already gone to the strap. "I'll tell you later."

Rashid looked at him for about a second. "Okay," he said, and went back under the bench.

Jefferson Hill arrived at nine with two coffees. One of them was for a graduate student who had made an error on the whiteboard in front of him the day before and had not slept either.

"Line three," he said.

"I know. I found it at two in the morning."

"Then line three is the best work you did all week, and I would like you to notice that, because nobody else is going to."

Then he stopped at Jay's bench. Hill was seventy-one, a big man, emeritus at Stanford, and came in four days a week because the instruments were here. He was also the man who had told Amanda Gladwell to hire Jay.

"You look terrible."

"I didn't sleep."

Hill's eyes went over the bench, the empty ring of dust, the bag, and came back to Jay's face. "Anything I should know about?"

This was the moment, and Jay felt it arrive. For one more day he wanted it to be his.

"Nineteen per cent," he said.

Hill held his eye a second longer than the answer needed. "All right," he said.

At noon Caswell stopped in the doorway.

"Amanda is walking the building on Monday," he said. "She is bringing the board. I would like a number that is not nineteen per cent, Davies. I am not particular about which number."

It was Friday.

Jay got through the afternoon. At five the floor began to empty, and he did the arithmetic he had been circling since the kitchen. The guard, Ernie, came on at eight and walked the

floors twice a night. After midnight the alarm went on and the side door would not open until six.

He went out at half past six with everybody else, the bag on his shoulder and both hands on the strap, and stood at the bus stop across the road in the cold.

He did not get on the first bus. He did not get on the second.

Scene 5

The bottom drawer of Marvin Caswell's filing cabinet was labelled OLD GRANT CORRESPONDENCE. At twenty to seven on Friday evening he unlocked it and took out a pair of combat boots, two sets of folded fatigues and a canteen, and packed them into a green duffel bag.

He kept them at work because of his wife. Maureen had found the fatigues in the hall closet once and told the story at dinner parties for a month.

The desk phone rang. Amanda Gladwell called at twenty to seven on Fridays. She liked people to know that she knew who was still in the building.

"Monday," she said. No hello. "I'm walking the board through your division. What am I showing them?"

"The most promising programme in the building."

"The most expensive programme in the building. Those aren't the same word, Marvin." Something rustled at her end. "Jeff Hill is a lovely man who's too polite to ask anyone for money. Davies is thirty-two. I need somebody down there who wants it. That was supposed to be you. In March I'll need to see a number."

She hung up.

Caswell put the receiver down very gently. The woman had inherited the company from her father and had never run an experiment in her life.

Rashid Lamrani passed the open door with his coat on, glanced at the boots on top of the duffel bag, and stopped. "Big weekend, Dr Caswell?"

"Map and compass. Finding your way through the woods. It's how the army does it when the satellites go down."

Rashid considered this. "My phone does that," he said, and went on down the corridor.

Caswell's phone buzzed. A message from Maksym, who ran the weekend courses out past the last gas station and wrote English the way he spoke it.

Sunday 6. Same place. Bring water Professor. Not coffee.

Tomorrow was the shooting range. Sunday was Maksym, and the woods, and men who called him Doc and wrote down his answers.

At five to seven he put the duffel in the trunk of his car, beside a long gun case. Some of what was in that case he was not strictly entitled to own.

If anything ever came out of that laboratory, it would come out with Davies's name on it, and Hill's, and Amanda's company would sell it, and Marvin Caswell would be the man in the photograph standing slightly to the left.

He had decided some months ago, without any drama, that he would be the one holding it.

He drove to the exit and waited for the light.

Across the road, Jay Davies stood at the bus stop with a bag on his shoulder and both hands on the strap. A bus pulled in. The doors opened. Davies did not move. The bus pulled away without him.

Caswell watched him in the mirror until the light changed.

Scene 7

At twenty to eight Jay crossed back over the road and badged in at the side door. Somewhere a computer wrote down that Dr J. Davies had entered the building at 19:41. In six years he had never once thought about that. He thought about it now.

Upstairs he locked the lab door for the first time in six years, and hung a lab coat over its glass panel, because twice a night the guard looked through every one.

He set the box and the cup exactly where his photographs showed them. He wrote a card in block capitals and taped it to the bench:

INFRARED — SAME POWER — TURNS IT OFF

Always know your way out of the room.

He put his phone on a small tripod, pointed it at the empty air above the cup, and started it recording. Then he fired the laser.

Above the cup, the little laboratory built itself out of nothing. He spread his hands until it was as wide as his arms, lifted it to the height of his face and wound back to the moment he had seen last night, his own face looking down into the cup, and a few minutes further.

The picture turned over and settled. It was his office. The cup stood on his desk, and everything near it was enormous: keys the size of matchboxes, a monitor that ran up out of the picture, and above it all Jay himself, huge, chin on his hand, chewing the inside of his cheek.

"I do that?" he said.

He moved the beam down to the base of the cup.

The picture went black. With the black came sound, thick and muffled, voices and keys heard through a wall. He rolled forward. The black broke all at once into light, the ceiling swung past, and he understood. A hand had picked the cup up.

"You couldn't see a thing," he said to the cup. "So you listened."

Every part of it. All the time. And there were ten other mugs on the rack, and doorknobs, and walls.

He put that thought away carefully, the way you put down something hot.

Then he noticed that two small buttons had appeared under the nearer wheel.

3D

DANGER

He pressed the one that did not say DANGER.

The lab disappeared. Jay's legs went, and he was on the floor with both arms over his head before he had decided anything.

Nothing happened. He opened his eyes.

He was standing in his office, at the exact spot where the beam had touched the cup, and he was about eleven centimetres tall.

The desk stretched away from him further than the lab. Behind him rose the curved white wall of the cup. Above him, filling half the sky, was his own face, each eye as big as a car wheel.

He turned a wheel, and the office came alive around him, backwards. He reached out and touched the desk. His hand went into it up to the wrist, and he could see the grain of the wood running across his knuckles.

He walked towards the far side of the office. About four metres out, his body would not go any further. The empty air gave a little, and pushed him back. Where his hands touched it, faint rings of colour spread away over his head and faded.

He hit it with his shoulder. It held.

He took out his phone, for no reason except that it was the most normal thing he owned. NO SERVICE. In the middle of his own lab, a hundred metres from a cell tower.

I'm inside a coffee cup, four months ago, he thought, and nobody knows where I am.

He made himself breathe the way he did at the end of a long run, in for four, out for six. Then he looked down. Where the 3D button had been, it now said QUIT 3D.

He touched it, and the lab came back.

Jay leaned on the bench for a long time.

"I will never," he said to the empty room, "ever underestimate a cup of coffee again."

Then he touched the other button.

The air above the wheels filled with flashing red letters.

WARNING: EXTREME DANGER. PROVIDE BIOMETRIC INFORMATION.

Below them was a small blank square, the size of a fingertip.

Jay held his finger over it. He looked at the box: the hand-cut joints, the careful soldering, the switch set in dead straight. The man who built it had left no notes and no manual. He had built a warning instead.

"Not tonight," he said, and took his hand back.

At eleven he went after the spiral.

In the cupboard under the window was an old optical chopper, a slotted wheel on a motor that cut a beam into flashes. He set it in front of the ultraviolet and ran an infrared line in beside it, so that the two could take turns. Then he wrote a few lines of code on the lab computer to open and close the shutters in any order he liked.

Last night he had been flicking the shutter by hand, in a panic. Somewhere in that panic had been the right rhythm.

Ultraviolet, ultraviolet, dark. Nothing. Three ultraviolet and an infrared. Nothing. Long, short, long. Nothing.

At a quarter to twelve he had tried two hundred patterns and the beam had not even noticed.

He sat back and drank cold coffee from the most important cup on Earth.

Then he played last night's video in his head, the way he would play back a bad measurement. The beam had already been running. He had not fired at the sphere cold. He had flashed it *while it was on*.

He lit the beam again, waited for the little office to open, and sent the pulses into the sphere a second time, on top of the running beam.

The office vanished. In its place, turning slowly above the bench, hung the spiral of blue points.

Jay did not move.

It was not a picture of anything in the room. Thousands of points, brighter towards the middle, wound in two long arms. It looked like a photograph of a galaxy, except that it was in three dimensions, and when he walked round it, it was a galaxy from every side.

He read the pattern off the screen. Ten pulses. Ultraviolet, ultraviolet, infrared, ultraviolet, infrared, infrared, ultraviolet, ultraviolet, ultraviolet, infrared.

Ones and zeros. Ten of them.

He changed the last pulse and sent it again.

The galaxy went. A column of small white dots appeared in the air: one dot, then two, then three, then four, each row a little lower, down to ten.

Somebody was counting.

At ten past twelve he set the laser to infrared at the same power, and the beam and the dots went out together. He took the coat off the glass and walked home, because there were no buses at that hour.

Somewhere in the last four hours the thing in his bag had stopped being the box. It looked back into time, and it spoke in a code of light, and it knew how to count.

A Temporal Viewer, he thought, halfway down the empty street. Then, a block later: *No. It's more than that. It's a terminal.*

He did not know yet what was on the other end.

Scene 8

In six years Caswell had never seen Davies miss a bus. He went round the block, parked in the dark by the loading dock, and watched Davies let himself in at the side door at twenty to eight.

He phoned his wife. "I'll be late. Amanda wants a report for the board."

"Of course she does," Maureen said, and hung up.

In his dark office he changed into the fatigues. Boots last, laced tight. At the corner of the corridor, where the lights worked on motion sensors, he got down on his stomach and crawled the last twenty yards on his elbows, the way Maksym made them crawl through mud. The floor smelled of lemon polish.

The lab door was locked, and a coat hung over the glass. Caswell had a key to every door in his division. He opened it four inches.

A room was hanging in the air above the bench. It was as wide as a man's outstretched arms and lit from inside: a desk, a keyboard, a monitor. When he moved his head, the room turned with his eye. It had depth. There was no screen behind it.

Davies reached out and touched something in the air.

The picture burst outwards into a globe as wide as the lab. It went down through the floor and up through the ceiling and stopped a few feet short of the door. Davies dropped to the floor, then got up and walked straight across the room, and stopped in the middle of nothing. He hit the empty air with his shoulder. There was a dull thump, and the whole globe shivered like water in a tapped glass.

Caswell shut the door and went back up the stairs. He did not crawl.

At a quarter past twelve Davies left with the bag on his shoulder and one hand under it. Caswell gave him twenty minutes, then went down.

The lab was tidy. The only thing left was a card taped to the bench: INFRARED — SAME POWER — TURNS IT OFF. A shutdown note. Every laser lab had one.

He walked to the place where Davies had stopped and held his hand out flat into the air. It went through. There was nothing there.

"Light doesn't push," he said.

He knew every dollar in the division. None of them had paid for this. Davies was working on something of his own, at night, on Gladwell equipment, and a man in that position had a great deal to lose.

Caswell did not call security, and he did not call Amanda. He went back to his office, still in his boots, and searched for the smallest camera a private citizen could buy.

The one he chose would fit behind the grille of a smoke detector. He paid extra for next-day delivery.

Scene 9

The television had been on since half past six that morning. On the screen a lioness lay flat in the yellow grass. In front of the screen Erwin lay flat on the rug. Neither of them had blinked for some time.

His bowl had been empty for eighteen hours.

Jay filled it before he took his coat off. Erwin did not come at once. He watched the lioness miss her wildebeest, and only then did he walk over and eat, slowly, with his back to Jay. *Eighteen hours*, Erwin thought. *You can wait five minutes, human.*

It was ten to one. Jay made coffee instead of opening a beer, plugged his phone into the laptop and opened the video from the lab.

The phone had seen what he had seen. The little office above the cup. The globe bursting out to fill the lab. A man dropping to the floor with his arms over his head, getting up, walking out of the frame. A thump, and the whole globe shivering, rings of colour running across its skin.

The wall he had hit was the skin of that globe.

In the corner of the screen a small cloud icon was turning. The phone had found the Wi-Fi and started doing what he had told it to do three years ago: copy every video to his online backup. Eleven per cent of the lab was already on a server somewhere.

He stopped it. He deleted the eleven per cent, then deleted it again from the Recently Deleted folder.

He looked round the kitchen. The walls. The fridge. The window over the sink.

"A fly on the wall," he said. "Except there's no fly. The wall is the fly."

Erwin came in and sat on the chair opposite.

"You'd never even have to switch it on," Jay told him. "You'd only have to let people know you had it. Every senator. Every billionaire. They'd pay for the rest of their lives."

Erwin washed a paw.

"But turn it round, and nobody ever gets away with anything again. The victim's clothes testify. The stolen watch remembers the thief."

He opened tabs. President Nixon's tapes, with eighteen and a half minutes that somebody erased. The Mona Lisa behind her bulletproof glass.

"Somebody erased the tape," he said. "Nobody erased the room. The desk heard every word." He looked at the Mona Lisa. "She watched Leonardo paint her."

He felt the hair rise on the back of his neck.

Erwin got down and went to look at his bowl. *Less talking*, he thought. *More food.*

Jay put the box back on top of the cupboard, where it had sat for six years being nothing, and stood at the sink with his back to it. He could leave it up there. Go back to nineteen per cent. Live forty careful years, and nobody would ever know.

Four ninety-nine to find out what it is.

He took the box down again and opened a blank page on the laptop.

HOW FAR BACK DOES IT GO?

DOES IT WORK ON EVERYTHING? WOOD, CLOTH, LEATHER, BONE?

WHO MADE IT?

TEN PULSES. ULTRAVIOLET = 1, INFRARED = 0. $2 \times 2 \times 2 \dots$ TEN TIMES = 1,024 POSSIBLE COMMANDS. I HAVE FOUND TWO.

He sat looking at that line for a long time. A galaxy nobody had photographed. Somebody counting to ten in dots of light. Two words out of a thousand.

He sat looking at it. Then he added:

SOMETHING OLD. ONCE ALIVE. A STORY I CAN CHECK.

A minute later, one more line:

MY BABY SHOES? MOM'S ATTIC.

The clock on the oven said ten to four. Too early to call her.

When he turned round, Erwin was sitting on the box, facing the wall.

Scene

Forty-one biology papers sat on Claire Davies's kitchen table in two piles, and the pile she had not marked was winning.

Her phone rang. The screen said JAY. She put the pen down. Her son did not call her. She called him, every Sunday, and he answered on the fourth ring.

"It's me, Mom."

"Jay, darling. Have you built the quantum computer yet?"

"Not yet."

He laughed, but the laugh came half a second late. Claire had spent thirty years listening to teenagers explain where their homework had gone. She heard the half second and put it aside for later.

From the bathroom came a clank, and a word she chose not to hear. "Your father," she said, "is applying his scientific talents to the downstairs toilet."

"Mom. Do you still have my baby shoes? The first ones?"

Claire had just taken a mouthful of cold tea. Most of it stayed in.

"Don't tell me you got a girl pregnant and you're so broke you can't even buy the shoes."

"No, Mom. They're for a project."

"What kind of project at a quantum optics lab needs a pair of baby shoes?"

He did not answer that. Then, in a voice with no joke anywhere in it: "You wouldn't believe me if I told you."

Claire stopped smiling.

"Okay," she said lightly, because lightly was what he needed. "Come to dinner tomorrow and you can have them."

The attic was hot and smelled of cardboard. A bare bulb hung from the beam.

The shoes were in the third box, wrapped in tissue paper gone the colour of weak tea. Smaller than she remembered. Soft white leather, scuffed grey across both toes where he had dragged them for a whole autumn, learning to walk.

Under them were the photograph albums. She knew she should not open them. She opened them.

Claire at twenty-two, in a borrowed lab coat at Berkeley, on her way to a doctorate. Then Julia. Then Jay. Then Tom. Tucked between two pages, an envelope covered in sums in

Mark's small handwriting: rent, formula, the car. Across the bottom, underlined twice: I'LL TEACH.

Then she turned a page, and there was Fred.

Uncle Fred, sitting on the porch step with his cigarette held away from the camera, laughing. It was the last photograph anyone ever took of him.

She remembered Jay in the kitchen doorway. Twelve years old, white to the lips, his mouth open and no sound coming out. He had taken her wrist in both hands and pulled.

She remembered Mark on his knees on the boards, pushing on Fred's chest and counting out loud. Fred had been fifty-one.

The next morning Jay went out running before anyone was up. He came back an hour later and was sick in the flowerbed. The morning after that he went again. He had never stopped, and she had never asked him why.

She sat back on her heels with the photograph in one hand and a shoe in the other, and she knew where she had heard that voice before. *You wouldn't believe me if I told you.* It was the boy in the kitchen doorway.

Something had frightened her son.

She looked down at the little shoe in her palm, under the bare bulb, and found that her face was wet.

From downstairs Mark shouted, "Nearly there!"

He had been nearly there for two hours.

Scene II

His mother gave him the shoes at the front door on Sunday night, wrapped in tissue paper the colour of weak tea.

“Fixed,” his father announced from the hall, meaning the toilet, and held up both hands like a surgeon.

Claire did not ask what the project was. That was so unlike her that Jay noticed it. She put the little parcel into his hands and held on to it a moment longer than she needed to.

“Bring them back,” she said.

He took a taxi straight to the lab. He locked the door and hung the coat over the glass without thinking. It was a habit already. He taped the card back onto the bench and set one small white shoe down where the cup had stood.

He ran his thumb over the grey scuff on its toe before he let go of it.

He fired the laser. Above the shoe the little world built itself, and he spread it as wide as his arms.

He tried the wheel forward first, past now. It would not go. It stopped against the present like a door against a wall.

No future, then. He was surprised how relieved he felt.

He turned it the other way.

Darkness: the inside of his bag, the rumble of the taxi. His father’s voice, faint: *Fixed*. Then, for a few seconds, light.

His mother’s face filled the picture, very close, lit from one side by a bare bulb. She was looking down at the shoe in her palm, and her face was wet.

Jay’s hand came off the wheel. She did not know anyone could see her.

“Sorry, Mom,” he said quietly, and rolled the wheel on fast until she was gone.

Then the black began. The counter ran back through his whole life and the picture stayed dark. Rain on a roof. Once a year, something heavy dragged across boards with a jingle inside it. The Christmas decorations, going down and coming back up. Thirty years in a box in an attic.

At thirty-four years the picture changed, and he slowed down.

The shoes could not be more than thirty-two years old. So what was this?

A long concrete room, lit very white. A rail overhead. The view was low and swaying, pressed against something warm and brown that was breathing. All around was a noise, animal and metal together. A man in a long rubber apron stepped forward with something in his hand.

The picture jerked. The breathing stopped.

Jay turned the wheel too late to stop himself hearing it.

He stood with both hands flat on the bench and breathed. In for four, out for six.

"It was recording while it was still alive," he said aloud.

The wheel would go further back. Into a field. Into the animal's mother. He took his hand off it.

He looked at the back of his own hand, moved it towards the beam, stopped a finger's width away, and took it back.

"Easy," he told the machine. "Nobody's turning into jelly tonight."

He wound forward through the leather's next two years. Vats. A great wooden drum, turning. A cutting table, a stamp, a shop shelf. Then a young woman's face looking down, turning the shoe over to find the price.

His mother. Younger than he was now.

"Mark, look how tiny," she said.

A man's voice he knew and did not know said, "Twenty-two dollars for that?"

"Mark."

They bought them. Jay laughed out loud in the empty lab.

Then he went looking for the thing he had come for.

Everybody in the family knew the date. It was written on a videotape in his father's handwriting: J — FIRST STEPS. The tape was a family joke. At the crucial moment the camera swung down and showed forty seconds of carpet.

He found the morning, full of light. The view was from a few inches off the carpet. A young woman knelt with both arms held out. A little girl stood beside her, caught halfway through a clap. Behind them, with a camcorder the size of a loaf of bread on his shoulder, stood a thin young man with a great deal of hair.

His father.

Jay pressed 3D.

The picture burst outwards, and when the room steadied he was eleven centimetres tall, standing on the carpet of an apartment in Berkeley that his parents had left thirty years ago. Behind him rose a curved white wall of soft leather. The shoe. It was on a foot, and the foot was his own. Above him a baby's leg rose like a tower.

He turned the wheel gently, and the world came alive.

The shoe lifted, and the whole room swung up and sideways around him. The toe dragged across the carpet with a long soft scrape, and Jay, swaying, understood how both toes had come to be scuffed grey.

"The baby's walking!" his sister shouted, and clapped and clapped.

"Come on, Jay," his mother said. Her voice came from everywhere at once. She was laughing and nearly crying. "Come on, baby. You can do it."

Jay, thirty-two years old and eleven centimetres tall, stood in the middle of it with tears running down his face.

One step. Two. And behind Claire, his father lowered the camcorder.

He let it slide off his shoulder until it hung from its strap, still running, pointed at the carpet, because he wanted to see this with his own eyes. His face was completely open. Jay had never seen anyone look so happy.

Forty seconds of carpet.

Jay let go of the wheels and watched his father's face.

The baby reached his mother's arms. She swept him up, and the whole world went up with her, and the shoe swung out into the air, and Jay's stomach gave up.

He found QUIT 3D and made it to the sink in the corner.

When he could stand up straight, he switched off the beam and typed into his phone: *34 years. Leather: yes. Records while ALIVE. Living skin: DON'T.* He wrapped the shoe in its tissue, carefully, and put it in his bag.

He took the coat off the glass and switched off the light.

Above the door, behind the grille of the smoke detector, a small black lens had been watching since Saturday.

Scene 12

The phone buzzed on the arm of Caswell's chair at twenty-five past nine on Sunday night.
MOTION — CAM 1.

He shut the study door and opened the feed. Through the ceiling came the sound of Maureen's television.

The picture came from the corner above the lab door. Davies set a baby's shoe on the bench and switched on the laser. The controller's red readout was big enough for the camera: 3.50 W. Caswell wrote it down.

A woman's face, wet with tears, filled the little picture for a few seconds, and Davies spun the wheel hard to get past it. Caswell saved the frame.

Then a living room seen from the carpet. A kneeling woman. A young man with a camcorder on his shoulder.

Davies reached into the air, and the picture burst outwards to fill the lab. Beside him rose a curved white wall with a seam and a scuffed grey toe: the shoe from the bench, many times its size. Then the shoe lifted, the whole giant room swung, and Davies staggered and threw out an arm to keep his balance, like a man on a bus when it brakes.

Caswell sat very still.

Nobody loses his balance watching a screen. Davies was not watching anything. He was standing in it. On Friday Caswell's hand had gone straight through the air where Davies had hit something solid. Now he knew what Davies had walked into. It was the edge of the place he was standing in.

Davies set the laser to infrared. 3.50 W again. The beam went out.

The card on the bench was not a shutdown note. It was the instructions.

Caswell sat back. Thirty years ago there was no camera small enough to ride on a baby's foot. Nobody films years of darkness. So the pictures came from the shoe itself.

He pulled a legal pad towards him and wrote, in the small square hand he had used in laboratory notebooks all his life:

- 1. Objects keep a record of light and sound.*
- 2. The device plays it back. 3D, with sound. At least 30 years.*
- 3. UV 3.5 W on. IR same power off.*
- 4. Amanda must never know.*

Page four of every contract in the building: anything discovered under Amanda Gladwell's roof belonged to her company. She would own this by lunchtime, and Hill would get the credit.

Every intelligence service on Earth spends its life trying to get a microphone into a room. This one was already in every room that had ever existed. If you wanted an enemy's newest weapon, you would steal a general's tie from the laundry.

Governments would pay anything.

This was not a job for one man. It needed money, and people who did not ask questions.

Caswell picked up his phone and typed to Maksym: *I need to see you. Not in the woods.*

Scene 13

At twenty past nine on Monday morning Jefferson Hill sat at his desk with a pair of old earphones on and his eyes closed, moving a pencil lead across a razor blade.

The radio in front of him was a cardboard tube wound with copper wire gone brown, a razor blade and a pencil lead on a safety pin. He had built it at ten years old. It needed no battery. A man's voice came through, very faint, reading the traffic on the 101. Hill did this before every board meeting.

Amanda Gladwell put her head round the door. "Jeff. They're on the stairs." She looked at the radio. "Is that thing plugged in?"

"It doesn't plug in. It runs on the radio station."

"Then it's cheaper than you are. Come on."

The board came down the corridor in good coats, with Amanda in front and Caswell at her shoulder carrying a folder. At the far end Jay Davies stood outside his lab with his bag on his shoulder and one hand underneath it. He had not shaved, and his eyes were red. He was looking at Hill.

"Good weekend, Jay?" Caswell said.

"Fine. Thanks."

In six years Caswell had never called him anything but Davies. Hill noticed it, the way he noticed everything.

The stairwell door had hardly closed before Jay was in Hill's office.

"Jeff, you're not going to believe this."

"You finally caught that sneaky photon."

"Better. I can see the past."

Hill looked at the red eyes. "When did you last sleep?"

"Saturday. Some of Saturday."

Hill got up and turned the key in the door. "From the beginning."

Jay told it standing up, drawing on the whiteboard: a box, a straight line for the beam, a coffee cup, a little room floating above it. A man eleven centimetres tall. A shoe.

"The beam doesn't spread?" Hill said.

"Not by a hair."

"That isn't possible. And a baby's shoe is forty grams of leather. You're telling me it holds thirty years of pictures."

“Thirty-four, in three dimensions, with sound.”

“Jay, that breaks every law of physics we have.”

“Every law we have,” Jay said.

Hill opened his mouth and shut it again. “Then prove it. Not on a phone.”

“Tonight. Bring something old. Something whose story only you know. If I’m lying, you’ll catch me.”

Hill was quiet for a while. Then he sat down in the visitor’s chair and put his big hands together between his knees.

“My family comes down from a man called William Slade,” he said. “Born free in Virginia in 1815. During the war he ran the White House for Abraham Lincoln. Steward, valet, messenger. The man with the keys. When Lincoln was shot, William washed the body and dressed it for the funeral, and he clipped a lock of the President’s hair for his family.”

He held up a finger and thumb, almost touching.

“Our branch got about a dozen hairs. They lived in an envelope in my grandmother’s Bible, then in my mother’s. I’ve never shown them to anybody outside the family.”

“Jeff, that’s too much. Bring something else.”

“No. I know every word of that story. If your machine gets one of them wrong, I’ll know.”

“Nine o’clock?”

“Nine.”

When Jay had gone, Hill put the earphones back on and moved the pencil lead across the blade until the voice came back.

Scene 14

At a quarter to nine that night, Ernie at the front desk saw Dr Hill come in through the glass doors in his good overcoat, with his right hand pressed flat against the left side of his chest.

"You all right, Doc?"

"Never better, Ernie."

Hill signed in with his left hand, badly, and did not take the right one away until he reached Jay's door.

Jay locked it behind him and hung the coat over the glass. Hill picked up the box and turned it over under the lamp: the hand-cut hole, the blobs of old solder.

"Frankly, Jay, it looks like the work of an amateur."

"So does your radio."

Hill smiled for the first time that evening. Then he reached inside the overcoat and brought out an envelope so old it had gone soft, like cloth. He laid a sheet of lens tissue on the bench and opened the envelope on top of it. Inside was a small twist of hair, dark brown and grey together, tied round the middle with a thread that had lost its colour.

Hill's hands were shaking. Jay had never seen that before.

"Before we start, a prediction," Jay said. "The shoe went back to the slaughterhouse and no further. So this hair should go back to the day it began to grow, and not a day more. Hair grows about a centimetre a month. This is about ten centimetres. So it stops about ten months before the day it was cut."

"And if it doesn't?"

"Then I'm wrong, and we've learned something."

Hill nodded once. It was what he would have said.

Jay switched off the lights and fired.

The beam rose out of the box, every colour at once, turning on itself. Hill stepped back so fast he hit the stool behind him. "Holy crap," he said. In fifty years of laboratories he had never sworn in one. Then he came forward and sighted along the edge of the beam, the way a carpenter checks a plank.

"It doesn't spread."

"No."

Jay laid the beam along a single hair. A little room built itself in the air, and Jay spread it wide and raised it to their faces. It was the lab seen from the lens tissue, with two huge faces leaning over the edge. One was an old man's, deeply lined.

"Is that what I look like?"

"Pretty much."

Jay turned the wheel back. First came the inside of the overcoat, and through it a slow, heavy knocking, very close. Hill's own heart. Then a drawer. Then years. The dark stayed dark, and now and then a sound came through it, thick and muffled. A hymn. A child crying. And once an old woman's voice, very near, as if the envelope lay in her lap:

"...and he was the President's friend, child, don't you let anybody tell you different..."

Hill's hand closed on the edge of the bench. "Keep going," he said. "Later. Keep going."

The dark went on for more than a century and a half. Then light: men in dark coats, a white sheet. Jay spun through it without slowing down, and Hill did not ask him to. Gaslight. Crowds. Rain.

The wheel stopped against something and would not turn any further. The picture filled with summer: green trees, white light, the corner of a porch.

Jay read the counter. "June 1864. Just under ten months."

Hill looked at him the way he looked at a student who had just been right.

"The Soldiers' Home," Hill said. "He spent his summers there." He took a breath. "Can you take me to the twenty-ninth of March, 1865? At night? Grant had gone to the front to finish the war. Lincoln stayed behind on a steamboat in Virginia, waiting for the telegrams."

Jay found the night. A small cabin lit by an oil lamp. Rain on the deck overhead. The whole room rocking gently. On the wall hung a small square mirror, and in it was a face.

It was the face from every schoolbook, ten years older. The eyes were sunk deep. The beard was grey. He was looking at himself the way a man looks at a stranger he feels sorry for.

"Can you make it move?" Hill whispered.

"I can do better. Stand by the door, Jeff. I don't know what this does to anyone close to me."

Jay pressed 3D. The picture burst outwards into a globe and stopped a few feet short of Hill's shoes. Inside it, Jay stood in an enormous cabin, turning slowly with his face tipped back.

"Jay," Hill said.

Jay did not answer. Hill walked towards him, and halfway there his hands met something he could not see. It gave under his palms and pushed back. Rings of coloured light spread from his fingers across the skin of the globe.

Inside, Jay found QUIT 3D, and the globe fell back into the little room over the bench.

"I lost you," Jay said.

"You were standing in the middle of the room talking to the ceiling." Hill looked at his palms. "And there's a wall."

"Maybe it takes whoever's touching me."

Hill put his big hand on Jay's shoulder, and Jay pressed the button.

This time it took them both.

They were standing in a forest. Stalks rose round them higher than their heads, coarse, grey and brown, swaying. Beyond them, as big as a cathedral, lay the cabin. The rain on the deck was a steady roar. And the ground under their feet rose, and fell, and rose again, slow and warm.

It was breathing.

"Jay," Hill whispered. "We're standing on his head."

The ground tilted. The man beneath them sat down on the edge of a bunk and put his head in his hands, and the whole world pitched forward. Jay and Hill grabbed each other.

A woman's voice came out of the dark, thick with sleep. "Father? What time is it?"

"Late, Mother. Listen. Those are Grant's guns."

The voice came from under them and all round them at once. It was not deep, as they had both expected. It was high and a little reedy, a country voice, and very tired.

"Come to bed. You haven't slept in three nights."

"When I do sleep, I dream." A long breath lifted the ground and set it down. "I heard sobs, as if a number of people were weeping. I went from room to room until I came to the East Room. There was a coffin, and a body wrapped for burial. 'Who is dead in the White House?' I asked one of the soldiers. 'The President,' he said. 'He was killed by an assassin.'"

The rain roared.

"That is horrid," Mary Lincoln said. "I wish you had not told it."

"Well, it is only a dream, Mary. Let us say no more about it."

A hand as big as the sky came down and passed over the whole forest, smoothing it flat, the way a tired man pushes back his hair. Then the lamp went down.

In the dark Hill spoke very quietly. "A friend of his wrote that dream down thirty years later. Every historian I respect decided the friend made it up. So did I." The ground rose and fell under them. "Take me to the fourteenth of April, Jay. Ten o'clock at night."

Jay turned the wheel. Days went by in flickers. Bells, and cannon fired in celebration, and crowds. At two minutes past ten on the night of the fourteenth of April, 1865, he let the wheel slow to the speed of life.

Gaslight, soft and yellow. When they turned, the whole of Ford's Theatre lay spread out below them: rows of heads, the balconies, a stage as bright as noon. A man in a loud checked suit was talking to a woman in a hooped skirt, and the house was laughing at every word.

Under their feet the ground moved gently back and forth, and beneath the laughter there was a small creak, repeated, like a clock.

"The rocking chair," Hill said. "The manager brought it down for him."

At the back of the box sat a young woman in a pale evening dress, and beside her a young officer. Close beside them, so close that her voice came from everywhere, a woman leaned in and whispered, half laughing, "What will Miss Harris think of my hanging on to you so?"

And the voice from under their feet, warm and completely at ease: "She won't think any thing about it."

Hill made a sound Jay had never heard a grown man make.

"Those are his last words," Hill said. "Jay. Those are the last words he says."

On the stage the man in the checked suit shouted a line after the woman, and the theatre roared with laughter.

Behind them, under the roar, a door opened.

In the doorway at the back of the box stood a young man with a black moustache and a pale, handsome face. He had something small in his right hand, down by his side, and he was already walking forward.

"No," Jay said. Then he was shouting it. "No! No!"

Hill was shouting too, but not "no". He was shouting "Mr President!" at the top of his lungs, a seventy-one-year-old man in an empty laboratory, trying to warn a man who had been dead for more than a century and a half.

The young man raised his hand to the back of Abraham Lincoln's head and fired.

The sky cracked. The whole world pitched forward and down, and Jay and Hill went with it. They lay in a hot dark of hair, with gunsmoke hanging in a blue sheet above them. The man beneath them made no sound at all.

The creaking of the chair had stopped.

Then Mary Lincoln screamed.

A struggle behind them. Something flashed past the edge of the world: the young man going over the rail. A thud from the stage, and a voice thrown out to the back row the way an actor throws a line.

"Sic semper tyrannis!" (Thus always to tyrants!)

For one long second fifteen hundred people did not understand what they had seen. Some of them were still laughing.

Then hammering at the door, and a voice: "Let me pass! I'm an army surgeon!"

A young man in a plain dark suit came through the smoke. He looked like a student.

"Charles Leale," Hill said. His face was wet. "He's twenty-three."

Many hands lifted the world and laid it down on the floor of the box, with a ring of enormous faces leaning in round the edge of the sky.

Then Leale's hands came into the hair. Ten fingers, each as thick as a tree trunk, raked slowly through the forest, searching. The fingers were wet, and what was on them was dark and shone in the gaslight. They passed within an inch of Jay and Hill and stopped behind the left ear.

Leale knelt astride the body and pressed on the chest, hard, and let go, and pressed again. The whole world heaved under them like the deck of a ship in a gale.

Jay's lips were moving. He was counting the presses under his breath, one, two, three, four, the way his father had counted them over Uncle Fred on a porch step when Jay was twelve.

Leale bent down, face to face with the President. His face came down over them like the sky falling, running with sweat, eyes shut tight, and he forced his breath into the President's mouth, again and again. In the pauses they could hear him whispering: please, please, please.

Beneath them, faint and uneven, a heart began again.

A woman knelt at the edge of the world, still in her costume from the stage. Laura Keene, the star of the play. She asked if she might hold his head, and the world was lifted gently and set down in a lap of silk.

Her face hung above them, filling the sky. A tear gathered at the corner of her eye, and fell, and came down through the gaslight very slowly, turning, and burst on the forest a foot away and splashed through them both. They felt nothing.

Then she put out her hand and stroked Abraham Lincoln's hair. The fingers came through the forest, not searching now. Just stroking. Hill stood in the middle of it with his arms at his sides and let them pass over him, and wept.

Far above, Leale stood up. His voice was very young.

"His wound is mortal. It is impossible for him to recover."

Hill's lips moved with the words. He knew them by heart.

"Stop," Hill said. "For God's sake, Jay, stop it!"

Jay hit QUIT 3D, and the laboratory came back.

Hill got as far as the stool and slid off it onto the floor, with his back against the bench. Jay sat down beside him. Neither of them spoke for several minutes.

"I've read Leale's report forty times," Hill said at last. "Nobody told me he was twenty-three. Nobody told me he was praying."

"You can't know what it is until you've stood in it."

"Seven twenty-two tomorrow morning. In a borrowed bed across the street. They had to lay him in it corner to corner, because he was too long for it." Hill turned his head. "The next day William Slade washed him and dressed him and trimmed his hair. That's when he cut the lock. I don't want to see anything else. I want to see William's face. Just once."

Jay rolled the wheel forward through the fifteenth of April with his eyes on the counter, and Hill looked at the floor. Then the view swung up and came to rest in the palm of a hand.

A face bent over the palm, very close. A Black man of about fifty, in a clean white collar, with grey in his hair, looking down at the lock of hair in his hand. He was not crying. He had set his face carefully, the way a man does when there is still work to be done.

Hill got up off the floor. He put out his hand, slowly, into the picture. His fingers passed through the light of William Slade's face.

"William," he said.

Jay looked away.

After a long time Hill spoke without turning round. "My grandmother. Her mother. Every one of them who ever held this envelope. I could meet every one of them."

"We will," Jay said. He put his hand on the old man's shoulder. "But not today, Jeff. Please. Not today."

Hill laughed, wet and helpless. It was the first sound either of them had made in three hours that did not hurt.

Jay set the laser to infrared, and the beam went out. Hill folded the envelope along its old soft folds and pressed his hand flat over it in his inside pocket.

Above the door, behind the grille of the smoke detector, the small black lens had recorded all of it.

Scene 15

The diner on the road out of the industrial park never closed, because there was a hospital two miles further on. At twenty past one in the morning Jay sat in the corner booth with his bag under the table and his foot against it.

Hill came in from the parking lot with the cold on his coat and lowered himself into the booth.

"Grace all right?"

"She asked if I was all right. That's all she asked." Hill held up two fingers to the waitress. "Forty-four years, and that's still the whole question."

The coffee came. Neither of them drank it.

"Every trial with no witness," Jay said. "A hammer knows who picked it up."

"You're holding it by the handle, son. Take hold of the blade." Hill put one finger on the table. "Every judge, every general, every bishop alive has one hour he would die rather than let anyone see. You don't have to catch him doing anything. You only have to look until you find it, and then you own him. Every government secret is in the desk it was written on. Buy a chair from the room."

"There's more," Jay said.

He turned his phone round. On the screen a spiral of blue points turned slowly above a lab bench.

Hill looked at it for a long time. "What is that?"

"I don't know. It isn't in the room, and it isn't in anything the beam touches. It comes out of the sphere itself. It listens to light, Jeff. Ten flashes, ultraviolet for one and infrared for zero, sent while the beam is running. One pattern gives me that. Change one flash, and it counts to ten for me in dots." He swiped. A column of white dots, one, two, three. "Ten flashes make a thousand and twenty-four patterns. I've tried two."

Hill put his glasses on and took them off again.

"So it isn't a projector," he said slowly. "It's a terminal. Somebody built a keyboard out of light and left it in a ball."

"And the box only gives us one key. The viewer."

"Somebody built the box," Hill said. "A man. The display is in English. He found the keyboard first, and he made himself one button out of it, and hid the rest." He looked at the bag under the table. "Whoever he was, he knew more than we do."

"There's a button on it that says DANGER," Jay said. "It asks for a fingerprint. I haven't touched it."

Hill put his cup down very carefully.

"It asks for a fingerprint before it does something dangerous. So somebody decided who is allowed to do it. Until we know who, you don't press it. Promise me."

Jay looked at him for a long moment. "I promise."

"Good. And the other thousand patterns?"

"I want to try them. All of them."

"Then here are the rules. No notes on any computer that touches a network. Paper, and paper goes home with you. The box goes home with you every night. And nobody is told."

"Rashid?"

"Nobody. Not yet." Hill reached for his coat. "The first time anybody outside this booth sees it work, it stops being yours. Governments don't ask, son. They take."

"I'm not going to give it to a government."

"Nobody gives it to them." Hill dropped a ten-dollar bill on the table. "Go home. Sleep four hours. Then go and find out what else is in that ball, before somebody else does."

Scene 15

At four o'clock that morning, alone in his study, Marvin Caswell had watched Abraham Lincoln die on his laptop.

At three in the afternoon he parked outside Belenko Auto & Truck, the last building on a street that gave up before it reached the freeway.

Through the partition at the back he heard it. A soft thud. A pause. Another thud.

He looked round the partition. A man sat on a shop stool with one side of his face swollen shut. Maksym Belenko stood over him in a sleeveless undershirt, his fists red to the wrist. Maksym was in his fifties and built like a heavyweight wrestler, arms and legs like stone pillars.

"Do you know what we do with thieves, Vasiliy?" Maksym asked. "We make sure they don't steal again."

He took a Makarov pistol from the bench, laid the man's right hand flat on the stool, and fired.

Three fingers came off. Vasiliy made a high sound through his closed mouth, like a kettle in another room.

"Stop the bleeding," Maksym told the two men from the bay. "Throw him away somewhere."

Caswell was counting the shelves on the far wall. Four shelves. On the third, eleven quarts of transmission fluid and a coffee can of bolts. He had done this as a boy, when his father shouted through the kitchen wall.

Maksym washed at the sink with orange grit soap, scrubbed each nail with a brush and dried each finger separately. Last of all he buckled an old steel army watch back onto his left wrist, with a scratched face and a strap gone black with sweat. Then he turned round, smiling.

"Hi, Professor. Little staff problem. Come. Drink with me."

He set two glasses on an olive-green wooden crate by the wall. Its lid had black Cyrillic letters stencilled on it and a red star half scraped away.

"I need you to introduce me to your friends in the Russian government," Caswell said.

The glass came down hard enough to slop. "I am not Russian! I am from Krakughystan!"

"Sorry. My mistake." Eleven quarts. A coffee can of bolts. "But you were an officer."

"Captain. Until independence." Maksym slapped the lid of the crate. "When the Soviet Union fell apart, the whole world was counting nuclear warheads. Nobody counted crates. Rifles, rockets, mines, night glasses. I had the inventory sheet in my hand. So I counted." He

shrugged. "And then I stopped counting. Most of it went to Africa. Gambalia. That war lasted eleven years. Very reliable rifles."

"And you still have friends."

"Expensive friends." He rubbed his thumb against two fingers. "What do you sell?"

"Something worth more than a nuke. There's a small problem. We have to steal it."

"Whose is it?"

"A colleague."

Maksym poured again. "Good, Professor. If a man could buy it, he would not need me."

Scene 17

For five nights Jay went through the patterns one at a time, in order, the way his father had taught him to go through a column of numbers. Write it down. Try it. Write down what happened. Next.

He did it on paper, in a school exercise book with a green cover, because Hill had said paper. The laptop only fired the pulses. When he left, he pulled out its network cable and took the exercise book home in his shirt.

Every pattern did something.

That was the first thing he learned, and the strangest. In ten years of experiments he had never seen a machine where every button worked. Most codes in most machines are empty. Here, every combination of ten flashes woke something up out of the black ball and hung it in the air.

Almost none of it made sense.

Pattern 14 was a cloud of points that turned and turned and never repeated itself, like a flock of starlings at dusk. Pattern 15 was the same cloud with three of the points glowing red. Pattern 40 was a long twisted ladder, like the DNA in a biology book, except that it had six strands instead of two, wound round each other in a slow braid. He walked round it for twenty minutes with the hair standing up on his arms.

Pattern 61 was a machine. At least, it had parts. It turned slowly in the air and opened itself layer by layer, like a flower, and each layer was more complicated than the last, until his eyes could not hold it any more and he had to look at the floor.

Pattern 77 was a crystal that folded itself into a shape he had never seen in any chemistry book, and then folded again into a different shape, and then back.

On the third night, at pattern 212, he found the dictionary.

It began the way the counting had begun. One dot. Two dots. Three. But this time each row had a small symbol beside it, a squiggle of light, and the symbols changed with the number of dots. After ten rows it began again with two symbols side by side.

Jay sat very still.

"That's a number," he said to the empty lab. "You're teaching me your numbers."

The next pattern showed a small circle with a single point of light turning round it. Beside it, the symbol for one.

"Hydrogen," Jay said. "One proton, one electron. The simplest atom there is." His voice was not quite steady. "The same on every world in the universe. You start with the one thing anybody who can build a laser has to know."

The pattern after that showed two points turning, and the symbol for two. Helium. Then three. Lithium. Then on through the table of the elements, each atom built up a point at a

time, each with its number beside it in the strange squiggles, until he could read their numbers as easily as his own.

He sat back with his hands shaking and remembered something from a lecture hall at Stanford, a long time ago. In 1974 the great radio telescope at Arecibo, in Puerto Rico, had sent a message to the stars: the numbers one to ten, the atoms that make up DNA, a small drawing of a human being. A message built for anybody who could count.

"Somebody did the same thing," he whispered. "Somebody did it for us."

After that the other pages began to open, a little at a time. Now that he could read their numbers, he could read some of what was written beside the pictures.

Pattern 14, the cloud of starlings, had numbers running beside it, and the numbers were the distances between the points, and the points were stars. A map. Pattern 15 was the same map with three stars marked, and Jay could not find a single one of them in any catalogue.

Pattern 99 was mathematics. Long lines of symbols, and in among them, now and then, numbers he knew, floating up out of the strangeness. Beside a drawing of a circle: 3.14159. The distance round a circle against its width. Beside a large dot and a tiny dot: 1836. The weight of a proton against an electron.

"You measured the same universe," Jay said.

Pattern 131 was the one that kept him up all night.

It was a picture, painted in light the way people once painted on the walls of caves. Tall thin beings with too many joints in their arms, standing in a line under two suns. Then the same beings building something that rose into the sky. Then the sky full of small bright points, all moving outwards. In the last picture the two suns had swollen and turned red, and nobody stood under them.

After it came pattern 132: a planet he did not know, blue and white, turning slowly under a red sun, with clouds moving over seas.

Jay switched off the beam and sat in the dark for a long time.

It was not a toolbox. It was not a camera. It was an encyclopedia, and it had come with its own dictionary. Chemistry he could not do. Bodies he could not imagine. Machines he could not follow. Somebody had packed everything they knew into a ball the size of a plum and sent it out into the dark, for anybody who could learn to count.

And the viewer, the thing that had stopped his heart a week ago, was only one page of it.

On the fifth night Hill came at eleven with two coffees and sat on the stool and watched the six-stranded ladder turn above the bench.

He did not say anything for a long time.

"How many have you done?"

"Four hundred and twelve. A few of them I can read. Most of them I can't."

"And the ones you can read?"

"Numbers. Atoms. A map of stars nobody has ever seen. A people with two suns." Jay turned the exercise book round. "Jeff, I think they were dying. I think this is what they left."

Hill looked at the beings under the swollen red suns and took his glasses off and put them on again.

"Every word of this," he said quietly, "is worth more than every building in this city."

"I know."

"Then you know why nobody can have it alone." Hill stood up. "Keep going, son. Find out what's in the rest of it. And sleep sometimes."

When he had gone, Jay wrote the next pattern into the exercise book and fired it.

Pattern 413 was a crystal. A diamond, by the shape of its lattice. But inside the diamond, here and there, a single atom was missing, and beside each gap sat an atom of something else, in a pattern that repeated every few thousand atoms like the stitches in a sweater. Beside it ran three lines of their numbers. A temperature. A pressure. A time.

Jay knew that crystal. Not that one, but its cousin. He had read a hundred papers about it.

He stopped breathing.

Scene 18

The borscht had been on since four. Maria Karpova stood over it with a paring knife, cutting dill straight into the pot.

Maksym came in at seven and went to the sink without a word. Orange grit soap, the nail brush, each finger dried separately. The knuckles of his right hand were split across the top.

She put a bag of frozen peas by his chair and asked nothing. She never asked about the shop. It was the only rule in the house, and it was hers.

He sat and laid the Makarov on the table beside his spoon. Maria looked at it. He moved it to the chair next to him.

“Hurry up, woman. I’m hungry.”

She turned round with the ladle in one hand and the knife still in the other. “Speak to me like that again and this soup goes in your lap. Boiling.”

Maksym looked at the pot. Then at the knife.

“Please,” he said, much lower. “I am hungry.”

Twice, in the first year, he had raised a hand to her. Twice she had hit him flat in the face, then laid this same knife on the board and told him exactly what she would cut off in his sleep if there was a third time.

She set the bowl down hard enough to slop. He ate fast, and after the third vodka he laughed at nothing.

“The Professor came today. He says in his laboratory is a machine. You shine it on a thing. A cup, a shoe. It shows you everything that happened near that thing. Pictures. Sound. Thirty years.” He knocked on the tabletop. “This table. It shows who sat here.”

“The Professor wears soldier clothes on Sundays.”

“Yes. Crazy. And he wants to steal it.”

Maria looked round her own kitchen: the calendar from the Ukrainian bakery, the clock that ran four minutes fast, the brown stain on the wall behind the stove.

“Then everything you ever did is still there,” she said. “Sitting in the walls. Waiting for somebody to switch on the light.”

She meant it as a joke.

Maksym did not laugh. He looked at the brown stain behind the stove, which neither of them ever talked about.

Then he took out his phone. “Professor! I’m interested. Saturday. No stories. Bring me something I can see.”

He slid the Makarov into his jacket and went out to the garage.

Maria cleared his bowl. Under the sugar tin was a letter from Zhabyn, the village where she grew up. Her brother's boy had written it in pencil, pressing hard. *Thank you for the parcel. The boots fit. Papa says to ask when you are coming home.*

She turned the envelope over and wrote the price of a one-way ticket to Warsaw, and under it the bus fare from Warsaw to the border. She added them up and underlined the total twice.

Then she put the envelope back under the sugar tin, total side down.

Scene 19

Every quantum laboratory in the world knows the diamond with a hole in it.

Take a perfect diamond. Knock out one carbon atom, and put a nitrogen atom beside the gap. The pair holds a single electron that can be made to spin one way, or the other, or both at once. It is a qubit, and unlike almost every other qubit it will work at room temperature. The trouble is that it does not work for long. A breath of heat, a stray field, and the spin forgets. A few thousandths of a second in the best diamond on Earth. Gladwell Research owned a machine to grow those diamonds, a steel chamber the size of an oven in the corner of Jay's lab. Jay had grown hundreds. The best of them had given him his nineteen per cent.

The diamond in pattern 413 had its holes in a pattern.

Not one here and one there, where they happened to fall. A gap every few thousand atoms, always the same distance apart, always with the same partner beside it. And the partner was not nitrogen. In the alien numbers it was fourteen. Silicon.

Beside the picture ran three lines of numbers. Jay could read them now. A temperature, a little over eight hundred degrees. A pressure, a fraction of the air's. And a list of times, short and long, like a piece of music: when to let the silicon in, and when to shut it off.

A recipe.

On Sunday night he loaded the chamber with a sliver of ordinary diamond for a seed, set the gas flows by hand from the exercise book, and wrote the timing into the controller one line at a time. Methane, hydrogen, a trace of silane for the silicon. On, off. On, off. The plasma came up inside the little window, a ball of violet light no bigger than a walnut.

He went home and fed Erwin and came back and watched it all night.

On Tuesday afternoon he opened the chamber. The seed had grown a skin of new diamond as thin as the film on a soap bubble, grey, and nothing to look at.

He mounted it under the microscope, aimed the green laser, and set the measurement running: put the spin in two states at once, wait, and see how long it remembered.

The program waited a millisecond. The spin remembered.

It waited ten milliseconds. It remembered.

A tenth of a second. A full second.

Jay stood with both hands flat on the optical table, not breathing.

Five seconds. Nine. Eleven.

At eleven seconds and four hundredths the line on the screen finally fell.

He read the number three times. Then he sat down on the floor of the lab, the way he had the first night, and laughed until he had to wipe his eyes.

"Nineteen per cent," he said to the ceiling.

A warm qubit that lived eleven seconds. Not eleven millionths. Eleven seconds, on a bench, at room temperature. Put a few thousand of them on a chip, and a quantum computer would sit on a desk. It would break the encryption that guarded every bank transfer and every military message in the world, and whoever built it first would own the century.

The laughter went out of him all at once.

He looked up at the corner of the lab, the way you look up when you feel watched, and saw only the smoke detector above the door.

At eleven that night, in his study, Marvin Caswell played the afternoon three times.

He did not understand the black box. He did not understand the sphere or the floating pictures or the strange spiral that Davies had been staring at all week. But he understood the screen at the end of the green laser. He had read that kind of screen for thirty years. And he understood the number at the bottom of it, because he had asked for a number every Friday for six years.

11.04 s.

He put the laptop down very carefully on the desk.

Every intelligence agency on Earth was racing to build that machine. Governments had spent billions on it. Davies had grown it in a weekend, out of an oven Amanda Gladwell had paid for, and nobody knew.

Nobody but Marvin Caswell.

He picked up the second phone, the one with only one number in it, and typed slowly, so that he would not get it wrong.

There is more than pictures. Much more. Worth more than anything you have ever sold. Saturday. I will show you.

Scene 20

Hill held the grey sliver up to the window with a pair of tweezers, as if it might bite him.

"That's it?"

"That's it. Less than a millionth of a gram." Jay had not slept. "Eleven seconds, Jeff. I ran it forty times. Ten point eight, eleven point one, eleven. It doesn't move."

Hill put the tweezers down on the bench and sat on the stool, slowly, the way he sat down when his knee hurt.

"Tell me what it means. Not the physics. What it means."

"It means a quantum computer that sits on a desk. No refrigerator. A few thousand of these on a chip." Jay heard his own voice go flat, the way it did in front of a class. "Every bank, every hospital, every army sends its secrets locked with codes that an ordinary computer would need longer than the age of the universe to break. A machine built on this breaks them over lunch. Every lock on Earth opens at once."

"And who has it?"

"Us. And a ball the size of a plum."

"No," Hill said. "Whoever reads that ball has it. Today that's you. Tomorrow it's whoever takes it from you." He looked at the smoke detector over the door without knowing why he did it. "You know what happens to a young man carrying the most valuable thing on Earth in a canvas bag?"

"Nobody knows I have it."

"Somebody always knows." Hill rubbed his face with both hands. "We can't stay here. We need to know what that ball is made of, and I can't ask a single laboratory in this country without a form, and the form goes to Amanda, and from Amanda to people with no names. And we need somebody on our side with a door that locks and a reason to keep quiet."

"Who?"

"One of the best students I ever had. She runs a particle accelerator three floors under the Louvre. It's used on paintings, so nobody ever thinks of it for physics. It can tell you what something is made of, atom by atom, without touching it." Hill took out his phone. "And she is the most honest person I know, which is a problem, because she'll want to know everything."

"Then we tell her everything."

Hill looked at him. "That's the first time in six years I've heard you say that about anybody."

Jay picked up the tweezers and looked at the grey sliver for a long time.

"Call her," he said.

Scene 21

On the laptop on Yvonne Lefèvre's kitchen table, the Virgin's left eye filled the screen, cracked like an old plate. Beside it ran a graph with one thin spike, labelled Ti.

Titanium. Titanium white paint arrived on the market around 1920. The panel was sold as Italian, 1520s. Somebody had painted it four hundred years too late.

"You are not listening to me," Alain said from the sofa.

"I am listening. Lyon. Since Thursday. He does not answer."

Her brother was twenty-nine, handsome, and holding Mimi, a poodle puppy the colour of apricot jam, close against his chest. Yvonne's grey cat watched them both from the windowsill with total contempt.

She poured two glasses of Crozes-Hermitage. "Mon chéri (My darling), that man is going to kill you. He is arrogant, he takes you for granted, and he is never going to commit. You have known that for two years."

"You may be right." He turned his glass by the stem. "But he is there on Sunday, Yvonne. Who is here on Sunday?"

Mimi barked at the telephone half a second before it rang.

"Jefferson!"

"Yvonne. I'm here with a colleague, Dr Jay Davies. You're on the speaker." A younger voice said hello, badly, in French. "We need your advice. It's better not to discuss it on the telephone. We'd come to France."

"Jefferson, I like you, so I will be unkind for one sentence. When a man tells me he has something extraordinary and cannot describe it on the telephone, he is selling a forgery, or he has stopped sleeping."

A pause on the line.

"Yvonne. If I could put you in the room where a painting was made, while it was being made, would that be of any use to you?"

She looked across at the laptop. A strip of the Virgin's eye still showed above the hinge.

For four seconds she said nothing.

"That is a cruel question to ask a woman at this hour."

"It isn't a hypothetical."

"No. I can hear that. What do you need?"

"Your machine. An hour."

"AGLAÉ, our particle accelerator, is booked for two years by people with ministries behind them." She was already walking the length of the window and back. "So you do not come for my machine. You come for a conference. Instruments for the study of works of art, your company's name on my letterhead. I will make a conference. It will be very small. One condition. You tell me what it is before it goes under my beam. Not after."

"Agreed."

"Jefferson. Are you in trouble?"

"Not yet."

When she turned round, the room was quiet. Alain's glass stood on the table, half full. Beside it lay a paper napkin folded and refolded into a tight twist. No Alain. No dog.

She had not heard the door close.

In California, Hill laid his phone face down on the bench.

"You just put her name on a list," Jay said. "She has a career. A ministry over her."

"If this goes wrong, we won't be embarrassed. We'll be detained." Hill took off his glasses. "Now. How does it get through an airport?"

"A sealed ball in a lump of unknown metal, wired to a laser and a battery," Jay said. "Security only has to think it might be a dirty bomb, explosive packed with something radioactive. They take it, a government lab cuts it open, and we never see it again."

"So it travels as a scientific instrument. A quantum light meter, with a serial number and a French invitation."

"A forged export document."

"A printed lie about a light meter." Hill put his glasses back on. "Son, last week we watched a man murdered in front of his wife. I'm not losing sleep over stationery."

Above the door, behind the grille of the smoke detector, the small lens went on looking.

Scene 22

At four on Saturday afternoon the shutter of Belenko Auto & Truck came down, and Maksym poured two glasses of vodka on the olive-green crate.

Caswell came in walking close to the wall, drank his vodka in one go and unfolded a tablet. "Something you can see."

A lab bench, a man's back. Then, hanging in the air above the bench, a living room, and a baby taking four steps towards a kneeling woman.

"I also have videos of my family," Maksym said. "My nephew on his first bicycle. Very moving."

Caswell swiped. The same lab, at night. Davies, and an old man in an overcoat. The picture burst outwards and filled the room: a forest of grey stalks, and beyond them a theatre lit by gas lamps. A shot. Smoke. A woman screaming.

"This is a movie," Maksym said. "Lincoln. Everybody knows this."

"A projector needs a screen," Caswell said. "Glasses on your face. Smoke. This has nothing. Put your hand in it and your hand is inside it. The picture was already in the object. The first one came out of a baby's shoe. This one came out of a hair from Lincoln's head."

"A baby and a dead president. I move goods, Professor. Who buys this?"

Caswell had prepared for that. He swiped again.

Davies alone at the bench, late at night. Above the black box hung a slow spiral of blue points. Then a twisted ladder of light with six strands. Then rows of small symbols that changed while Davies stared at them.

"Nobody on Earth made these," Caswell said. "He finds a new one every night. I don't understand them. He doesn't understand most of them either." He swiped one last time. "But I understand this."

A grey screen with a green line on it, and a number at the bottom: 11.04 s.

"I have spent thirty years waiting for that number," Caswell said, and for the first time in Maksym's experience he did not sound bored. "Davies grew a crystal out of one of those pictures. With it you can build a computer that opens every lock on Earth. Every bank. Every army. Every secret every government has ever sent down a wire. Countries have spent billions trying to build that machine. He built the heart of it in a weekend. The pictures are how you prove it works. The diamond is what they will pay for."

Maksym was not listening any more.

"Go back," he said. "The first one. The room."

Caswell swiped back to the theatre, and the lab, and the floors and walls.

“Think of a room where you did something nobody was supposed to see,” Caswell said, because it was the sentence he had practised. “The floor was there. The walls were there. They recorded all of it.”

Maksym did not move.

He was looking at a classroom in a village called Ternivka, in the autumn the Soviet Union fell apart. A map on the wall. A stove with a bent pipe. Somebody in that village had shot one of his soldiers in the dark, and nobody came forward. He was young and in command, and he would not spend a week on it. He lined every grown man in Ternivka up against that wall and started at one end. The fifth man gave him a name. He shot the man who was named, in front of the others, and never found out whether it was the right name.

The school was still standing. So was the wall.

Without looking at it, he turned the old army watch on his wrist so that the face was underneath.

“Where does he keep it?” he said.

“He takes it home every night, in his bag.” Caswell was already turning the tablet round. An address. “No doorman after ten.”

Maksym read it once. “You gave me the address before you gave me a price.”

Caswell nodded, pleased, as if it had been a compliment.

“Send me all of it tonight,” Maksym said. “The baby, the president, the crystal. I know people who will pay for this more than you can count. People with an army.” He poured again. “And Professor. You tell nobody else. Not your boss. Not your wife.”

When Caswell had gone, Maksym switched off the lamp and sat for a while in the dark, with his hand round the watch.

Scene 23

The invitation lay on Amanda Gladwell's desk: cream card, an engraved crest, French on the left and English on the right. In raised type in the second paragraph it said *Gladwell Research, Inc.*

"It's a small meeting," Hill said from the chair across the desk. "Instruments for conservation. Museums are where the money for this kind of instrument is going now."

"Of course, Jefferson. Leave it with me."

Her office had a glass wall onto the corridor. She watched him all the way down to the lifts. He did not look back.

They all looked back. For fourteen years, every one of them had given one small check over the shoulder to see whether she was still watching.

She typed two names. QUANTUM OPTICS. Davies, J., 32. Hill, J., 71. Spent to date: \$1,400,000. Published: two conference papers.

The badge log was more interesting. Davies: in at 19:41 last Friday, out after midnight. In every night since, out after midnight. Hill: 20:47 Monday. In seven years Hill had never once badged in after six.

And the gas log was the most interesting of all. Nobody looked at the gas log except Amanda, because nobody else had grown up in a plant where her father checked every bottle that came through the gate. Last Sunday night the diamond reactor in Davies's lab had run for forty hours. Methane. Hydrogen. And a small bottle of silane, ordered on Monday morning by Dr J. Davies, marked URGENT.

Nobody ran a forty-hour growth for a project that was nineteen per cent of nothing.

Her phone buzzed. The care home. *Your mother had a good morning. She asked for Ray.* Amanda typed *Sunday, as always*, and turned the phone face down.

On the wall hung a photograph of her father in a hard hat on the floor of the Rockville plant. Ray Gladwell had founded the company with one plant and a loan from his brother. *Where there's smoke, there's fire*, he used to say.

She pressed the button on her desk phone. "Get me Dr Caswell."

He came in four minutes, with two pens in his breast pocket, one blue, one black, and sat down before she asked him to.

"They've invited Dr Hill and Dr Davies to present in Paris," Amanda said. "Under the Louvre. Your name isn't on it."

Caswell looked at the card. For a second his face did something she could not read.

"I lead that project. Those two are under my supervision."

"I know. So you go too. And Marvin. What did Davies grow in that reactor last week?"

"A test sample. Routine."

"Forty hours of routine." She watched him turn the university ring on his finger. "I want a report every day. Where they go, who they meet, what they carry. If one piece of Gladwell property leaves this country in their luggage, I want to know before it clears customs. And a photograph of the three of you in front of that accelerator, with the crest showing, for the shareholders."

"Understood."

At the door he heard her lift the phone. "Get me travel. Dr Smug is going to Paris."

His hand stopped on the handle for a second. Then he went out.

In the corridor he took out the second phone and typed: *I am going to Paris with them. Amanda suspects something. She knows nothing.*

The answer came in less than a minute.

Good. Then you can open doors for me.

Scene 24

Amanda Gladwell's laptop came down to Rashid Lamrani's workroom for the sixth time. A yellow sticky note on the lid said: *INTERNET BROKEN. A.G.*

The browser icon had been dragged off the taskbar again. He dragged it back. The internet worked. It had always worked. The browser opened on a forty-foot sailing boat with a white hull.

He stuck the sixth note on the shelf with the other five, under the water stain shaped like Portugal.

His desk phone rang. "Dr Davies. What can I do for you?"

Five minutes later Rashid was in Hill's office, and Hill shut the door.

"Two things, in a week," Jay said. "A transport case for a delicate instrument. About this big." He showed the size with his hands.

Rashid copied the shape in the air and held it there a second longer than he needed to. No instrument he knew was that size. It was the size of something you carry in your arms.

"And a portable laser. Ultraviolet and infrared out of the same opening, onto the same spot. At least four watts of each. A few seconds at a time."

Rashid sat on the arm of the chair. "Then forget the lab lasers. Four watts in this building means a table, a cooling unit and its own circuit breaker. You want diodes, the little chips inside a laser pointer. Run one for an hour and it burns out. Run it for three seconds and it doesn't care. Infrared is cheap. Real ultraviolet is not. The biggest chip gives a fifth of a watt, so I need twenty, aimed through one lens, with a block of copper behind them to soak up the heat. No fan. A fan whines at airport security. And the batteries come to about a hundred and twenty watt-hours. Over a hundred, the airline has to approve it in writing. I'll do the form."

"And one more thing," Jay said. "I need to flash them. Ultraviolet, infrared, in any order I like, ten flashes in under a second, sent from my phone."

Rashid looked at him. "Morse code. With four-watt lasers."

"Something like that."

"A small chip can do that. It switches a diode a million times a second." He thought about it. "One button," Rashid said. "Which colour do you need in a hurry?"

Jay looked at Hill. "Infrared. Infrared has to be the one I can hit fast."

Rashid's hand went to the green stone on its leather cord at his collar, and turned it once.

"What am I building, Doctor?"

Jay took a moment too long. "A laser."

"Okay," Rashid said, and stood up. "Six days. It'll all fit in a normal backpack."

The door closed behind him.

"He knew," Hill said.

"I know he knew." Jay pressed both hands flat on the table. "He's twenty-eight. I want him to still have a normal life a year from now."

"Everybody says that," Hill said. "Then they tell him anyway."

Two floors down, Rashid sat at his bench with the stone in his fist. It had been his grandfather's. Driss had carried it in his work-coat pocket for fifty years while he repaired radios in Fez, and later in Montreal.

"Four watts is not for looking at something," Rashid told the stone. "Four watts is for doing something to it. And the infrared switches it off. Fast."

He typed *375 nm laser diode* and put twenty in the basket.

In three years at Gladwell, Jay Davies was the only person in the building who had asked Rashid what he thought and then waited for the answer.

He pressed ORDER.

Scene 25

The corner beside the kitchen door belonged to Erwin. So did the rug in it, the bowl, the windowsill and most of the bed.

Jay came home at ten past eight, filled the bowl, and did something strange. He lifted the old black box out of his bag and put it down in Erwin's corner, eleven inches from the litter tray. Then he stacked two boxes of junk round it, so it looked like the others.

Erwin sat down and stared at him.

"I know," Jay said. "But nobody looks in a cat's corner."

I look in it, Erwin thought. Four times a day.

He sniffed every side of the box, then climbed on top and sat with his paws tucked under him, like a judge who meant to stay all day.

Jay opened his laptop and typed *Yvonne Lefèvre*. A long grey machine covered in wires. A painting of a woman holding a fat baby. Then a woman's face.

Jay's hand stopped on the trackpad. "Huh."

He found a recorded talk. She explained how a beam from the machine under the Louvre could tell what a paint was made of without touching the painting. At the end a man asked a very long question. She waited until he had finished, then answered in four sentences, and the audience laughed.

Jay went back thirty seconds and watched it again. Then again. He was not listening to the words.

He smoothed his hair down twice and looked at his reflection in the black edge of the screen.

I have seen this on the wildlife channel, Erwin thought. The male stands tall, cleans himself, walks up and down in front of the female. Humans do it in front of a screen.

Then Jay opened a magazine photograph of her at her kitchen table. On the windowsill behind her sat a grey cat.

A woman with a cat, Erwin thought. Perhaps she is not a fool.

"For professional reasons," Jay told him, and closed the laptop.

The lights went off. Erwin did his rounds, then turned round three times on his rug and lay down with his back against the black box. It was warmer than the floor.

He fell asleep there.

Scene 25

Erwin was a light sleeper. At ten to three he was awake, with his back against the black box and his ears pointed at the front door.

Someone was at the lock.

Erwin knew the right sounds. Feet on the stairs. Keys, dropped on the mat about one night in five. The wrong key first, *always the wrong key first*, then one click, and the door.

This was a small scratching that went on and on. There had been no feet on the stairs.

Erwin slid off the rug and went along the wall, low, to the leg of the armchair, and lay flat behind it where he could see the hall.

The lock gave. The door opened slowly, and the smell came in before the man.

Oil. Cold metal. Old cigarette smoke. Meat in the sweat. Over all of it, a harsh soap that smelled of oranges, scrubbed on hard and not working.

Not Jay, Erwin thought. *Something that hunts.*

The man closed the door without a sound. He was big. He wore something black over his whole head, with holes for the eyes. A small flashlight came on, half covered by his hand, and moved over the sofa, the shelf, the table. The man searched with his eyes. He never sniffed. He did not hear a cat breathing four feet away.

He is blind in here, Erwin thought. *I am not.*

The light passed the kitchen door. Stopped. Came back. Went into the corner.

The man knelt on Erwin's rug. He pushed the first junk box aside. His right hand reached for the next one.

Nobody goes into my corner, Erwin thought. *Only Jay.*

Erwin crossed the floor in four jumps and made no sound.

He growled low, with a hiss in the middle of it, and the hand stopped in the air. Before it could move again, Erwin had it in his mouth. He bit into the soft skin between the thumb and the first finger until his teeth met.

The man grunted and tore the hand away. The flashlight fell and rolled. Erwin let go, because a cat who holds on can be swung against a wall, and jumped for the face.

He landed on the left cheek. His front claws hooked into the edge of the eye hole. His back claws raked down, again and again, and the skin tore under the wool. The man came up off his knees with a cat on his head and hit at himself with both hands, and mostly hit himself.

One big hand closed round Erwin's ribs. Nothing had ever held him that hard. With the other hand the man pulled something from his belt. A blade shone in the light from the floor.

Erwin went limp. He slid out of the bottom of the grip like water, landed on four feet, and was under the sofa before the hand closed on nothing.

The bedroom door banged open. The hall light came on.

"What the... hey!"

From under the sofa Erwin watched two pairs of legs crash together in the hall. Jay's bare feet went back against the wall. The black boots found the door, and the man went down the stairs three at a time. On the landing below he swore. It was not one of Jay's words, and not one from the television.

Then the street door. Then nothing.

Erwin's back legs would not stop shaking. There was blood on his paws, and it was not his.

"Erwin? Beast? Where are you?"

Erwin put his head out and meowed.

Jay dropped to his knees and took him in both hands. He checked the ears, the neck, the ribs, each leg, all four feet. "Okay. Okay. None of this blood is yours."

Erwin did not like to be held. This time he let Jay hold him. *Jay's hands are shaking*, he thought.

The first junk box lay on its side. The black box had not moved. The man's little flashlight lay by the rug, still on, throwing a white oval on the wall. Jay switched it off and put it on the shelf by the door, next to his keys.

It smells of him, Erwin thought.

Jay phoned Hill. "Someone broke into my apartment. Nothing's taken. Erwin attacked him and he ran."

"Who is Erwin?"

"My cat."

A pause on the line. "Blessed be the pets," Hill said.

I am not a pet, Erwin thought.

"Have you called the police?"

"And tell them what? Nothing's missing. He wore a mask. They write a report, and somebody asks what I keep in a box in the cat's corner." Jay laid his hand flat on Erwin's back. "He went straight to the corner, Jeff. And he swore on the stairs. It wasn't Spanish. Russian, maybe."

A long silence. "Then we're both in danger. Bring it in the morning. And lock your door."

Then Jay went into the kitchen, and Erwin heard a sound he had not heard in eleven months: the plate of cold chicken sliding off the middle shelf of the refrigerator.

At last, Erwin thought. He ate all of it.

He did not lie down in the warm place against Jay's side that night. He sat at the foot of the bed with his feet tucked under him, facing the dark hall and the front door.

Scene 27

At twenty past three Maria was at the kitchen table in her dressing gown, the way she always sat when he worked at night. She heard the key miss the lock twice. Maksym never missed a lock.

He came in with his right hand wrapped in a handkerchief and went straight past her towards the bathroom.

"Stop," she said. "Come here. Under the light."

She turned his face to the lamp. Four long scratches ran down his left cheek, from the bone to the jaw. One had missed the eye by the width of a fingernail. She unwrapped the hand. Four deep holes in the skin between the thumb and the first finger, two on top, two underneath.

Maria had grown up on a pig farm with eight brothers, three dogs and more cats than anyone had ever counted. She knew that bite.

"Who is she?"

"What?"

"The woman with the sharp nails and the small teeth. Who is she?"

"There is no woman."

She fetched hot water, gauze and a blue can from under the sink: a purple spray from the farm-supply store, sold for cows and horses.

"That is for animals," Maksym said.

"Yes. Hold still."

She sprayed his face. He hissed through his teeth and gripped the table. When she let go of his jaw, the left side of his face was purple. It would stay that colour for a week.

"You know what I do if you cheat on me, Maksy." She opened and closed the kitchen scissors once. "So who is she?"

He looked at the ceiling. "I wish it were a woman."

She waited.

"It was a cat."

She had played the whole scene to make him say that word, and she thought she was ready for it. She was not. She had to turn round and hold on to the sink. Every time she looked back at him, purple, with his hand in a bowl of pink water, it started again.

"A cat," she said, when she could speak. "A captain. Decorated by the army of Krakughystan. And a cat sends him home to me like this."

“It was a big cat.”

“How big?”

He held his hands apart in the air. Then he looked at them and moved them a little closer together.

She sat down, because her legs would not hold her.

“Why didn’t you shoot it?”

“A gunshot, in an apartment building? Neighbours. Police.”

“And why didn’t you send one of your boys?”

“They carry heavy boxes. They break bones. This needed a professional.”

She looked at the purple face and the pink water. “Yes. I can see that. A professional.”

She bandaged the hand tight. “If this is red and hot tomorrow, you go to a doctor.”

He said nothing, which meant yes.

She woke near five. His side of the bed was cold. There was a thin blue light under the kitchen door.

He sat at the table in his undershirt, watching a video on his phone with the sound turned low. It had not been on his phone the day before. For a second Maria saw the screen: a baby’s white shoe, and a woman’s face, very close, wet with tears. He dragged the video back with his thumb and watched it again.

She did not ask. That was her rule. She went back to bed and lay on her side, facing the door.

Scene 28

On Sunday morning Hill was waiting in Jay's office, still in his coat. He had not slept either.

Jay put the bag on the floor between his feet and hooked the strap round his ankle. Hill looked at the strap and said nothing about it.

"He went straight to the corner, Jeff. Past the television, past my laptop. He knew what he was looking for and he knew where it was. Who could have seen?"

"Is there a camera in that lab?"

"There can't be. Nothing wireless is allowed in there. It throws off the measurements." Jay heard how that sounded. "Rashid would know. Every device in this building goes through him."

Rashid arrived thirty-five minutes later, in a sweater. He sat at Jay's computer.

"Everything that joins our network has to ask it for an address first. I keep the list." A column of numbers filled the screen. He scrolled, and stopped. "That one's new. About ten days. The maker's code says cheap security camera. And it sends a lot of data, day and night. That's video."

"Can you see it?"

"These cameras come with a factory password. Most people never change it." The second one worked.

Jay was looking down at his own lab from above the door. His coat over the glass, on the inside, where it hid nothing. The black box on the bench. And in the corner, the steel door of the diamond reactor, and the microscope beside it, and the screen where, five days ago, a green line had run for eleven seconds.

Rashid looked at the screen for a long moment. His face did not change.

"Where does it send?" Hill asked.

Rashid searched the log of people who connect to the building from home. One line came back. The same address, every night, all after nine. Username: MCASWELL.

"That little shit," Hill said. Jay had never heard him say that about anyone.

"I'll take it off the ceiling and go straight to Mrs Gladwell," Rashid said.

"No," Jay said. "If you take it down, he knows we found it. Leave it running. Please. And tell nobody."

Rashid looked from one to the other. He closed the window and logged out. At the door he stopped with his hand on the frame, and Jay waited for the question. Rashid had every right to ask it.

"Okay," Rashid said, and went out.

"That young man is worth more than this building," Hill said. Then, lower: "Ten days. So it saw Lincoln. And my call to Paris. Her name. Her city." He stopped. "And it saw the number."

"It saw the number," Jay said.

They looked at each other.

"Marvin Caswell knows exactly what eleven seconds means," Hill said. "He's waited his whole career for it. And Marvin Caswell doesn't pick locks at three in the morning. So Marvin has sold it to somebody who does."

Jay stood up.

"Where are you going?"

"To do something I should have done on Tuesday."

In the lab, under the camera, he did it slowly, so that whoever watched would see every step.

He took the grey sliver out of its box with the tweezers and laid it on a ceramic block. He put on the dark goggles. Then he turned the big infrared laser on it, the one that cut steel, and held the beam there until the diamond glowed white and turned to a small black stain of carbon that would never hold a qubit again.

He opened the reactor's computer and deleted the growth program, and the log of the growth, and the backup of the log.

Then he took the green exercise book out of his shirt, tore out the four pages with pattern 413 on them, and burned them one at a time in a steel tray under the fume hood.

When he came back, Hill was standing in the doorway.

"Feel better?"

"No," Jay said. "It's still in the ball. Anybody who can count can find it again. And I can grow it again in three days with my eyes shut." He pulled off the goggles. "But Caswell doesn't have a sample, and he doesn't have a recipe. All he has is a video of a number. And the only way to the recipe is through the ball, and the only way to the ball is through me."

"That makes you the most valuable man on Earth," Hill said. "And the easiest one to grab."

"Then we leave," Jay said. "Paris. As soon as Rashid's pack is ready."

"And Erwin?"

Jay looked at the bag between his feet, and at the long scratch on the back of his own hand where he had held a frightened cat too hard.

“Erwin goes to my mother,” he said. “She’ll spoil him rotten, and he’ll never forgive me.”

Scene 29

At four in the morning on Wednesday, one day early, Rashid Lamrani pulled the zip closed on the backpack and sat looking at it.

It was an ordinary grey hiking backpack. That had been the hardest part. In the bottom, twenty ultraviolet chips sat in a ring on a copper block, with one infrared chip beside them, and both colours came out of a small opening in the side behind a flap that looked like the pocket for a water bottle. Above them was a padded bay, built to the size Jay had shaped in the air with his hands. A chip the size of a stamp could flash either colour a million times a second, in any order the phone sent it. Under the top flap was one red button. It fired the infrared at full power. No phone, no app, no password.

They came at a quarter past nine that night. Jay had the canvas bag on his shoulder with one hand under it. Hill shut the door and stood with his back against it.

"Before you power it," Jay said, "a week ago you asked me what you were building. I said a laser. That was a lie. I wanted you to still have a normal life a year from now." He looked at the floor. "Jeff says that's what everybody says. So I'm sorry. I'm stopping."

Nobody at Gladwell had ever apologised to Rashid for not trusting him. He did not know what to do with his hands.

Then Jay told him, plainly and in order. The thrift store. The beam. The baby shoe. Lincoln. The flashes, and the galaxy, and the dictionary of dots. The diamond that had held a thought for eleven seconds, and the black stain of carbon it had become.

When Jay stopped, Rashid whistled the opening notes of *The Twilight Zone*, very quietly. "You're kidding. Right?"

"Nope."

"So this came from a UFO."

"This *is* the UFO," Jay said. He pointed at the green stone on Rashid's chest. "Can I borrow that?"

Rashid's hand closed round it. Then he lifted the cord over his head and gave it to Jay.

Jay set the stone at the end of the bench and lowered the black box into the padded bay. It fitted exactly. "Ultraviolet. Past three and a half watts."

Rashid slid his thumb up the screen of his phone.

A thin rope of colour came out of the sphere and crossed the room. Two wheels of light hung in the air, and above the stone floated a small bright picture: this room, three tiny men, frozen. One of them had his mouth open. Rashid saw that it was him, and shut it.

"Mon Dieu," he said. (My God.) "A hologram. With no plate. No glasses."

"Now turn the ultraviolet off."

He did. The beam went on turning. Rashid looked at the app. The pack was drawing no power at all.

"The laser is off," he said. "What is feeding it?"

Jay raised his shoulders. "Pick a day when you were wearing the stone. One you remember."

Grandpa's voice is in there, Rashid thought. If I hear it now, I will cry.

"My last birthday," he said.

Jay wound back: ceilings, car roofs, more ceilings, and then a warm yellow blur, and a cake with candles.

"Stop!"

It was his parents' dining room in Montreal, seen from the height of his own chest. Twenty-eight candles.

Jay took Rashid's hand and pressed 3D, and the room disappeared.

Rashid was standing on his mother's dining table, and it was as big as a parking lot. The candles rose in front of him like burning towers. Above him, filling the sky, was the underside of his own chin.

He let go of Jay and dropped, curled on his side with both arms over his head, the way he had lain in the schoolyard when he was eleven.

"It's okay," Jay said, close and calm. "Nothing here can touch you."

After a while Rashid got up. Jay turned the wheel, and the room began to move. They were singing. His mother conducted with the cake knife. His sister Rania climbed on a chair and started it again in Arabic, off-key on purpose. At the far end his father, Youssef, sang to the ceiling in a deep voice.

Then the giant face above them leaned forward to blow out the candles. The stone swung out on its cord, and now it looked straight down the table at Youssef Lamrani.

On his birthday Rashid had shut his eyes to make a wish. The stone had seen what he missed. His father was watching him with pride, plain and whole. His mother leaned over and said something, and Youssef shook his head without taking his eyes off his son.

"C'est un bon garçon, Nadia. Laisse-le tranquille." (He's a good boy, Nadia. Leave him alone.)

"Go back," Rashid said. His voice did not sound like his own. "Please. Five seconds."

Jay went back five seconds, and Rashid watched his father say it again. Then Jay brought them out.

The workroom looked very small. Rashid sat down on the edge of the bench and said several things in French and several in Arabic, none of them to anybody.

"I'm an engineer, Dr Davies. How is this possible?"

"Somebody found the sphere in a meteorite, the thrift store said, and built the box round it, by hand, in English. That's all we know. And Jeff's rules: no notes, nothing typed, nobody told."

"It settles it," Rashid said. "Every man who ever said we are alone. It is finished."

"It proves somebody once made a sphere," Hill said from the door. "It doesn't prove they're still there."

"Once is enough, Dr Hill."

"And I have already added some things you did not ask for," Rashid said. "The pack will not turn on without you. A small chip goes under the skin of your left shoulder, the kind they put in dogs. A reader in the strap reads it, and then your phone has to stay close. Lose either one, and the pack goes dead. Except the red button. Turning it off should never need permission." He lifted the flap at the back. "And a tracker in the lining. If anybody takes this bag from you, I will know where it went."

"Who puts a chip in my shoulder?"

"I know a vet. She does forty a week. Dogs, mostly."

Jay looked at the pack, then at Rashid. "What can I say. You rock."

When they had gone, Rashid sat on the bench in the dark with the empty pack beside him. At school, for four years, boys had hit him because he looked different and knew the answers. He had always found a way out in time.

Men will kill for this, he thought. There will be no way out in time.

He put the cord back over his head, and the stone lay cool against his chest.

Scene 30

Rashid's apartment was nothing much: a discount sofa, a desk, a car eleven years old in the street. But the back room had its own air conditioner, set to seventeen degrees, and three black racks of computers with hundreds of small green lights.

On the big screen a dashboard said VIRTUALDECEASED.COM. MEMBERS: 2,814,302. In a news tab a headline asked who was behind the website that brings back the dead. Nobody knew. The money went into accounts in three countries, and none of them had Rashid's name on it.

He opened his own account. There was only one name in it. DRISS LAMRANI.

An old man appeared at a workbench covered in radio parts, in a brown work coat, with his glasses pushed up on his forehead. "Habibi (My dear). It's late. You should be in bed."

"I saw a thing tonight, Jeddi (Grandpa). A machine that works, and nobody knows why."

"There is no such thing. A broken thing is not a mystery. It is a working thing with one wrong part."

Rashid smiled. Driss had said that to him when he was six. It was in three of the old videos. The copy said it exactly the way Driss had said it. Rashid had built it the winter Driss died. The folder was still open on the second screen: 1,940 photos. Seventy-four videos from family phones: birthdays, Eid dinners, the workshop. Three hundred and twelve voicemails. Forty years of letters to his brother in Fez, scanned page by page. Eleven thousand WhatsApp messages.

Along the top of the screen ran four tabs, one for each step.

FACE. A program had studied every photo and every frame of video and built Driss in three dimensions, down to the way his left eyebrow went up before a joke.

VOICE. A second program had listened to the voicemails and the videos until it could say any sentence in Driss's voice, with his accent and his little cough. A few minutes of recording are enough for that now. Rashid had had hours.

MIND. The biggest program was a language model, the same kind that runs every chatbot. It learns to write by reading. Rashid had made it read everything Driss ever wrote or said, typed out word by word, until it answered the way Driss answered.

LIVE. When Rashid spoke, the mind wrote Driss's reply, the voice said it, and the face moved with it, all in less than a second.

VirtualDeceased did the same for anybody. Families uploaded what they had, and the four steps ran on the racks in the back room.

But Rashid knew where every word of it came from. When Driss was alive, he had sometimes said things nobody could have guessed. The copy never did.

Under his T-shirt the green stone lay against his chest. He took it out and held it in his palm. In the stone was Driss's real voice. Every word he had ever said with it in his pocket.

"Good night, Jeddi."

"Sleep, habibi. And don't let them cheat you."

He sat for a long time in the cold room with the hundreds of small green lights.

Two million eight hundred thousand people trusted those racks with their dead. Their letters, their voices, their faces. The racks in this room copied themselves every hour to rented machines in eleven countries, so that no fire and no government could ever take them all down at once. And not one of those people knew whose they were.

Men will kill for that ball, he thought. And the only thing that stops a man who wants to own something is knowing that the moment he grabs it, everybody else gets it too.

He did not know yet why that thought had come to him. He wrote it on a yellow sticky note anyway, and stuck it on the edge of the screen.

IF THEY GRAB IT, EVERYBODY GETS IT.

Scene 3I

At ten past seven on Thursday morning Jay sat on a steel table made for large dogs, with his shirt off, while a woman he had never met cleaned the back of his left shoulder. The clinic did not open until eight. She did not ask him a single question.

The needle was as wide as a drinking straw. A hard push into the muscle, and it was over.

"Grain of rice. Don't sleep on it tonight." She dropped the needle in a yellow bin. "Good boy."

Jay looked at her.

"Habit," she said.

At nine that night the building was empty except for Ernie at the front desk and the three of them in the dark lab.

"Dr Caswell is watching an empty room," Rashid said, and turned his laptop round. "His camera sends him last night's film now, over and over. I redraw the clock in the corner. He will never know."

Jay put the pack on. The left strap came down right on the ache, and the app on his phone turned from grey to green. He walked out of the lab with the phone in his hand, down the corridor. Just past the fire door, the green turned red.

"Dead," Rashid called. "It stays dead until it reads your shoulder again. If somebody takes it from you, they have to take you too."

"That's not as comforting as you think," Hill said.

Jay set the box in its bay. Then he took a coin out of his pocket. A 1921 silver dollar. On Liberty's face the cheek had been rubbed almost flat by his Uncle Fred's thumb.

He knew the day Fred died without looking it up. He went to three months before it.

The beam touched the coin. Years of dark, the inside of pockets and drawers. Then summer. A big palm, stained yellow at the edge of the first finger. Beyond it, a painted wooden step, a lawn half cut, and a boy.

Hill took Jay's hand. Rashid took his sleeve. Jay pressed 3D.

They were standing in the hollow of a man's hand. Above them, as big as a cloud, was Uncle Fred's face: sunburned, heavy, amused. He held a cigarette out to the side, away from the boy.

For twenty years Jay had remembered a different face. Grey, on the porch step, while his father pushed on Fred's chest and counted out loud.

On the grass stood Jay at twelve, skinny, his face red from the mower.

"Good job, Jay," Fred said. His voice filled the sky. "Here's your reward. My lucky silver dollar. It'll multiply and make you rich."

"Are you very rich, Uncle Fred?"

"I'm on it."

Then he stopped. He pressed the side of his fist hard against his breastbone and held it there. One breath. Two. Three. The boy was looking at the coin.

"Heartburn," Fred said, to nobody. "Your mother's chili."

Jay could not move. At twelve he had not known what that was. He knew now. Pain in the chest that comes and goes, in a man of fifty-one who smoked all day. Anyone who knew what to look for would have taken Fred to the hospital that afternoon.

Somebody tell him, Jay thought. Somebody help him.

His free hand had moved, near the small button of light marked DANGER. He pulled it back and let it hang at his side.

"Catch," said Fred, and flipped the coin.

The world turned over. Porch, sky, lawn, sky, the giant face, the grass, every direction at once and none of them down. Rashid made a sound like a drain. Hill's hand closed on Jay's like a clamp.

Jay dragged the wheel back to zero, pressed QUIT 3D and hit the red button on the pack. The beam went out.

Hill held the edge of the optical table with both hands. Rashid was bent over the waste bin.

"It certainly works," Hill said at last.

"It does, Dr Hill," Rashid said, and was sick.

Hill came round the table and looked at Jay, not at the machine. "How old were you?"

"Twelve."

"And he—"

"Three months after that."

Hill put a hand on Jay's left shoulder. Jay flinched hard, then laughed.

"Grain of rice," Jay said.

"Sorry, son."

Jay had run six miles most mornings since the day after Fred died. He had never told anyone why. He could tell Jeff now. He did not.

He put the coin in his pocket. "Okay. Let's get packing."

On Friday morning Marvin Caswell walked into Davies's lab without knocking. He needed something to write in his report.

Four crates stood on the floor. Hill was at the far bench with a clipboard. On the bench beside Davies sat a grey hiking backpack, and Davies's left hand rested on top of it.

"Getting ready for the conference?" Caswell said. "I'm going too. Amanda wants me there."

"So I heard," Davies said, and looked at him a second too long.

"By the way, what's this?" Caswell nodded at the backpack. "I don't recognise it."

"A prototype. A quantum light meter. Rashid built it."

"You wouldn't have read about it," Hill said, without looking up. "A new class of silicon nanocrystal. The paper came out a few weeks ago. I assumed you'd seen it, Marvin."

Caswell had not read a journal properly in a year. "Of course," he said. "The nanocrystal paper."

He knew the black box's size from his laptop screen. He knew Davies never put it down without keeping a hand on it. He had never seen this backpack before. But he knew that hand.

In the corridor he took out the second phone, the one with only one number in it, and typed: *Paris. Both of them. Grey backpack. Davies never takes his hand off it.*

Scene 32

Jefferson Hill had been stopped by men in uniform about forty times in seventy-one years, and he had never lied to one of them.

Now he stood at the security checkpoint at San Francisco airport, his belt in his hand, while an officer read an equipment declaration that Hill knew was false.

The grey backpack lay open on a steel table. The officer, about forty, with reading glasses pushed up into his hair, read it twice. "Quantum light meter." He looked up. "Can I see it work?"

"Sure," Jay said.

Here it comes, Hill thought. The whole 3D shebang, and we all go to jail.

Jay touched his phone twice. Nothing happened. No beam. Nothing floated anywhere. The phone screen filled with moving bar graphs and numbers to four decimal places. Jay passed his hand over the open box, and every bar sank. He took his hand away, and they climbed back.

"Batteries?" the officer said.

"A hundred and twenty watt-hours."

"Over a hundred needs airline approval."

Hill's stomach dropped. He had never once asked whether the approval came.

Jay unfolded a printed email from Air France, approving one scientific instrument with built-in batteries of a hundred and twenty watt-hours, in the cabin. The officer read it and pushed the tray towards them. "You're good. Have a nice flight."

At the next table a big man was collecting one small bag. His right hand was bandaged round the thumb, and his left cheek was stained bright purple, like a grape popsicle. Hill wondered what had happened to him. Then Jay touched his elbow, and Hill forgot the man.

The plane had been in the air for forty minutes before Hill trusted his voice.

"How did you do that?"

"Rashid did. There's a sensor in the rim of the bay. The app has a second mode. It fires the ultraviolet, but well under three and a half watts. Below that the sphere does nothing. The numbers are made up, but they move with the sensor."

"And you knew. Why in God's name didn't you tell me?"

"Because you've never lied to a man in uniform, Jeff. If you'd known it would be fine, you'd have looked like a man hiding something. Instead you looked like an honest old professor who hates airports. Nobody searches that man."

Hill thought about it for a long time. "So you used my face."

"I used your face."

"You owe me a very good dinner in Paris." Hill let his seat back the two inches it had.

"Where's Erwin?"

"With my parents. Mom bought him a heated bed and salmon that costs more than my lunch. He's still sulking because I left him behind."

Nine rows behind them, Maksym Belenko sat in an aisle seat with the bandaged hand under a blanket. At security he had watched the old man sweat. *A fool can be frightened by a trick*, he thought. *That old man is no fool. It is real.*

He had seen something else. For twenty minutes Davies had not let go of that bag. Then a man in a uniform said *take it out*, and Davies took it out and stepped back without a thought.

They hold on to what they love against everybody, Maksym thought. *Then a uniform asks, and they open their hands.*

Further back, Caswell kept leaning into the aisle to look at the grey backpack, the way a dog looks through a butcher's window.

The lights went down. The old man's head tipped onto the young man's shoulder.

Maksym did not close his eyes.

Scene 33

The passport queue at Charles de Gaulle folded back and forth between the tapes nine times. Jay walked it with the grey pack on both shoulders, and the left strap ached on the chip every time the queue moved.

At the desks, two booths over, a big man in a charcoal suit caught his bandaged hand on the edge of the counter and swore. One short, thick word, not English.

Jay's head turned before he had decided to turn it. For a second he was back in his dark hall at three in the morning, with a big body crashing past him and someone swearing on the stairs.

All he saw was a broad back walking away.

Half of Europe swears like that, Jay thought. He said nothing to Hill.

"She's outside," Hill said, looking at his phone. He held out a mint without looking at Jay. "Grace's rule. Never land without one."

Their four crates came round together, stencilled GLADWELL — SCIENTIFIC INSTRUMENTS. They were three steps from the green exit when a customs officer stepped out from behind a pillar and raised one hand.

"Bonjour, messieurs (Hello, gentlemen). To the table, please."

His badge said GARNIER. He lifted the bubble wrap in the first crate with two fingers and closed it again. Then he looked at the backpack.

"And this, Sir? Could you turn it on, s'il vous plaît (please)?"

The bars climbed on the phone. Garnier passed his own hand over the box and watched them sink, and smiled like a man who liked gadgets. "It uses a laser? What class?"

The whole trip rested on one lie, that the box was a light meter. Every other question, Jay answered truthfully. "Class four."

The smile stayed, but Garnier took out his phone and showed Jay a page of French law. "In France nobody may buy, keep or use a laser above class two except for the uses on this list. And professional equipment that visits France needs a carnet, a passport for equipment. You have one?"

"No."

"Then I must keep the device until there is paper." Garnier laid a hand flat on the box. "It goes to our secure room, at the back."

Jay looked where he nodded: a door, a corridor, a second door at the end. At the lab the pack had died a few steps past the fire door. Garnier would carry it down that corridor, and somewhere between the two doors the light meter would go dark. No honest instrument does that. The first thing a good officer would do was open it.

Hill came to the table and took out his phone. "Our host is outside. Dr Yvonne Lefèvre, of the museums laboratory under the Louvre. It belongs to the Ministry of Culture. Would you speak to her first?"

At the word *Ministry*, Garnier's shoulders changed.

Fifteen minutes later a grey door marked DOUANE — ACCÈS RÉSERVÉ (Customs — Authorised Access Only) opened, and it was as if the oxygen left the room.

The photographs had got her face right and missed everything else. They had missed how fast she walked, so that the young officer behind her had to stretch his stride. They had missed how she looked once at the table, the crates, Garnier and the two Americans, and seemed to have read them all.

"Jefferson." She kissed Hill on both cheeks.

"Yvonne, this is Dr Jay Davies."

"Enchantée." (Pleased to meet you.) She shook his hand.

"Thank you. You too. Bone —" He heard it coming and could not stop it. "Bonjour."

"Bonjour," she said kindly, and let go.

She took Hill one step aside. "Jefferson. Is it a weapon?"

"No."

"Is it a light meter?"

Hill had never lied to her. "No."

"Is it research?"

"The most important research you will ever touch."

"Then I will tell him it is research. And you tell me what it is before it goes under my beam."

She turned back to the table. "The decree has a list of nine uses, monsieur. Number five is scientific research. Number eight is measuring instruments. This is both."

"The list is not a permit, madame, and there is no carnet. When the Ministry writes, we release it. Tomorrow. Perhaps Thursday."

"Who can release it today?"

Garnier wrote a switchboard number on the back of a form. For fifteen minutes a recorded voice told her that her call was very important. She walked a small circle, three steps and turn, and never raised her voice.

Then her face changed. "Rodolphe? C'est Yvonne. Oui, chéri, très bien." (Rodolphe? It's Yvonne. Yes, darling, very well.)

Garnier's arms came unfolded.

Jay's French could not have bought him a coffee, but he knew *chéri*. It went into him like a splinter. *You met her five minutes ago*, he thought, and was ashamed.

She held out the phone. Garnier took it and stood up straighter than Jay had thought his back could go. "Oui, monsieur le directeur. Immédiatement." (Yes, Director. Right away.)

He gave the phone back carefully and took his hand off the box.

"That was the head of customs for the Paris airports," he said. "Madame, you did not say."

"You did not ask."

She was already pushing the trolley towards the green doors.

"Close your mouth, son," Hill said quietly. "She'll see it."

Scene 34

The Land Rover was eleven years old and the colour of mud. Yvonne had bought it for the Centre's work outside Paris and chosen it because it weighed more than two tonnes. She drove it the way she argued: fast, in the correct lane, with no apology.

"Dr Lefèvre," Jay said from the back, with the pack on his knees, "how did you get through to the head of customs?"

"Yvonne. When you work at the Louvre, you meet everyone."

Rodolphe was sixty-three, had a bad knee, and called everybody *chéri*, including his plumber. She did not tell Jay that.

The Centre's door was on the quai François-Mitterrand, under the long wing of the Louvre. Yvonne took them to a small meeting room with no window and shut the door.

"Now. What is it?"

"We show you first," Hill said. "Then we tell you everything."

Jay opened the pack. A plain black box. Inside, a black ball in a lump of grey metal. Her eye slid off it.

"Can I borrow your necklace?"

Her hand went to it: a small turquoise pyramid on a thin chain, from the museum shop. She had bought it the afternoon she signed her contract and worn it every day since.

Jay hung it from the back of a chair. Hill switched off the lights. A thin rope of colour came out of the black ball and touched the pendant, and a picture the size of a postcard floated in the air: this room, seen from the chair. Three small figures at the table. One of them was her.

"Mon Dieu," Yvonne said. (My God.)

She walked round it. No screen, no glass. Her hand went through the air beside it.

Jay spread the picture to the width of his arms. "Give me a time when you were wearing it."

"The Tuesday before last," Hill said. "Twenty past seven, your time. When I phoned you."

Jay wound back. Her own kitchen table, seen from just under her chin. A bottle of Crozes-Hermitage. Her hands pouring two glasses. Alain on the sofa with Mimi in his arms. And her own voice, tired, repeating her brother's words back to him: *Lyon. Since Thursday. He does not answer.*

Yvonne sat down. "Is there a camera in my flat?"

"Look where it's filmed from," Jay said.

The picture rose and fell, gently, over and over.

"It moves when I..." She stopped.

"When you breathe. The necklace was there. It kept everything."

"Nothing stores pictures. I read the atoms of objects every day of my life."

"Everything does," Jay said. "We don't know how. This machine is only the playback." He held out his hand. "Take my hand. Don't let go."

She looked at Hill. Hill nodded. Jay pressed 3D.

Her kitchen stood all round her, enormous. The table was a plain of wood. The bottle was a tower. Above her head hung a vast soft curve that she understood, slowly, was the underside of her own chin.

Across the room Alain sat on the sofa, as big as a house. He was crying. He cried without a sound, with Mimi's head under his chin, while the giant Yvonne above them looked down at the bottle and filled the glasses.

She had not seen that. She had been looking at the bottle.

The phone rang. The world swung as she walked to the window. In the black glass she could see the room behind her. Alain stood up. He put a twisted paper napkin on the table and lifted Mimi. He waited, looking at her back. Five seconds. Then he went out and closed the door so quietly that she had not heard it.

"Enough," Yvonne said. "Please."

The meeting room came back. She let go of Jay's hand and saw white marks where her fingers had been.

She sat for a while with both hands flat on the table. Then they told her the rest: the thrift store, four dollars and ninety-nine cents, the coffee cup, the shoe, Lincoln's hair. The flashes of light and the galaxy and the dictionary of dots. The diamond. Caswell's camera. The man on the stairs, and the cat.

She listened without moving. When Jay described the eleven seconds, she closed her eyes for a moment.

"A secret is a very small room," she said. "Everybody who wants this thing only has to find the room. So we make the room big. We show it to the whole world. Then the whole world watches it, and it is safe." She looked at the wall, towards the galleries above. "She is upstairs."

"The Mona Lisa," Hill said.

"She watched Leonardo for years. Nobody alive knows what he looked like." Yvonne stood up. "But first I want to know what this is. Tomorrow at seven, before anybody comes in, that lump of metal goes under my beam. Atom by atom."

“And until then?”

“It stays here. In our strongroom. Two keys, a code and a guard all night.”

“No.” Jay’s arms were round the pack. “It stays with me.”

“In a hotel? Your flat was not safe. A hotel is less safe.”

“My cat was there.”

“Good cat. Mine would have helped him carry it.”

Hill laughed out loud.

Jay opened his mouth, looked at the door, and closed it. “All right. But it only wakes up for me. If they want it, they have to take me too.”

He carried it down two floors himself and set it on a steel shelf with his own hands.

At the street door he turned to say goodbye. “Oh. Reservoir,” he said.

Hill took his elbow. “Stick to the science, son.”

When they had gone, Yvonne put the necklace back on. Then she took out her phone and called Alain.

“Are you free next Sunday?”

Scene 35

Maksym had followed the mud-coloured Land Rover from the airport in the smallest car the rental desk had, with his knees against the wheel. It stopped by the river under the long wing of the Louvre. The three of them went in at a plain door with no name on it. Davies had the grey backpack on his shoulders.

At a quarter past seven the plain door opened. Hill came out, then Davies.

Davies's hands were empty. He touched his left shoulder, once, where the strap had been.

He left it inside, Maksym thought, and smiled for the first time since San Francisco.

He walked to the rue de Rivoli and bought a kitchen knife and a roll of grey tape.

The cleaners came at half past eight, one at a time, from the metro. The third was a man in his fifties in a blue work jacket, with a plastic card clipped to his chest. A large man in a charcoal suit stopped him on the quai and asked him, in English, very politely, for the way to the Pont Royal.

The cleaner turned to point.

Maksym's left arm went round his neck from behind. He had learned the hold in the army, on sentries, in the dark. The man stopped kicking after eleven seconds.

Maksym carried him down some service steps behind the bins and took the jacket, the card and a pair of yellow rubber gloves. He taped the man's wrists, ankles and mouth carefully, so that he could still breathe through his nose. He did not kill him. A dead cleaner would bring the police by morning.

The card said LUCIEN.

At the bottom of the stone stairs a guard of about sixty sat behind a desk with a newspaper. He looked at the blue jacket, said "Bonsoir" (Good evening), and went back to his newspaper.

On the first floor below ground, one office still had a light on. Somebody was typing.

Yvonne was writing a memo to her director. Behind her a trolley squeaked in the corridor. The same wheel always squeaked.

"Bonsoir, Lucien," she said, without turning round.

Lucien always answered. His granddaughter, his knee, the football.

Nobody answered.

She turned. It was Lucien's jacket and Lucien's card, and it was not Lucien. The man filled the doorway. The sleeves stopped well above his wrists.

“Where is it, bitch?”

English, with an accent she could not place.

She stood up. “Get out. Get out now, or I —”

He hit her with his open left hand. She went sideways off the chair onto the floor. Her mouth filled with the taste of metal.

“Merde.” (Shit.) She made herself look up. “What are you talking about?”

“The machine Davies and Hill brought here this afternoon.”

He knew their names. His right hand was bandaged across the palm and the thumb. On his left cheek were four short scratches, side by side, healing, in a purple stain.

A cat did that, she thought.

“It is in the strongroom. I can’t open it. Only the director can.”

That was a lie. One key was on the ring in her pocket. The other was in the director’s key box, and she knew the code.

“Really?”

He picked up the long scissors she used to cut tissue paper for the restorers, pulled her up by the wrist as if she weighed nothing, and spread her left hand flat on the desk. She fought. It made no difference.

He put her little finger between the blades.

“You work with your eyes,” he said, almost kindly. “Not with this finger. There is no need to lose an eye over a box.”

He began to close the scissors. A thin line of red appeared on both sides of her finger.

It will not even wake up for him, she thought.

“Okay. Okay. I’ll open it.”

He walked her down with the points of the scissors against her neck. On the stairs she thought of the guard, and of screaming, and of what the scissors would do before anyone came. She did not scream.

The strongroom took both keys and six numbers. On a steel shelf, between a crate from Florence and a Roman helmet, sat the grey backpack.

He opened the flap, looked inside, and smiled.

Then he put his big hand flat between her shoulders and pushed her, hard.

She saw the steel frame coming. Then nothing.

Scene 36

At seven minutes past two in the morning Jay was lying on the hotel bed in his clothes, wide awake, seeing a grey backpack on a steel shelf two floors underground. He had put it there himself.

The phone lit up with Yvonne's name.

"Jay." Her voice was flat and careful, as if her mouth hurt. "He has taken it."

He banged on Hill's door. Hill stood there in striped pyjamas, listened, and buttoned his overcoat over the pyjama top.

A police car was pulling away from the Centre as their taxi arrived. An ambulance stood by the plain door, and two paramedics were helping Lucien up the step in his vest and underpants and a foil blanket, with a strip of grey tape still hanging from one wrist. He was telling them, loudly, about his knee.

Yvonne came out. Her lower lip was split and swollen. Her left little finger was wrapped in white gauze, with a red spot coming through. The pendant was still round her neck.

Jay lifted his hand towards her face. Then he put it in his pocket.

"Not here," she said. "Inside."

In her office a chair lay on its side.

"I told the police a man in a cleaner's jacket hit me and made me open the strongroom," she said. "I did not tell them what he wanted. If I tell them about a machine nobody can explain, a minister is on the telephone by nine o'clock, and we never see it again." She looked at the gauze. "I opened the door for him, Jay. I am so sorry."

"I put it in there," Jay said. "And at passport control a big man with a bandaged hand swore at the desk. It sounded like the man on my stairs. I didn't tell you."

Hill looked at him for a long moment. "I'll be angry with you on the plane home, son. Tonight I need you thinking."

"His right hand was bandaged here," Yvonne said, and touched the skin between her own thumb and finger. "And on his left cheek, four scratches, side by side, in a purple stain."

Jay sat down on the edge of her desk.

"Erwin," he said.

"Your cat is a very good cat."

One man. In Jay's flat in California, and in this basement tonight.

"It won't work for him," Jay said, and touched his shoulder. "The chip. He can press buttons all night."

Yvonne looked at the shoulder, then at his face. "Then he will come back for the part that makes it work."

Jay heard his own words from the afternoon. *If they want it, they have to take me too.*

"Then we find him first." He called Rashid. In California it was a quarter to six on Sunday evening.

"The pack's gone."

A short silence. "Is anyone hurt?"

"Yvonne. She'll be okay."

Keys clicked. "I am sending you the tracker now."

A map of Paris came up on Jay's screen: the grey curve of the river, the ring road, and far out to the north-east, among the long flat roofs of warehouses, a small blue dot. It was not moving.

Yvonne came round the desk and leaned in, her good hand on Jay's arm. He did not move.

"God bless Rashid," Hill said.

"Now," Jay said. "Let's track down our baby."

Scene 37

At ten past ten that night Marvin Caswell stood in his undershirt in front of the hotel mirror, reading a talk for a conference that did not exist, when the second phone rang.

"Professor." Car horns behind Maksym's voice. "I have the machine. I come and get you. We test it tonight. My friends have a warehouse. Some very important people will be there. Very interested in buying."

Nobody had said anything about buyers.

"It works," Caswell said. "I watched Davies run it every night for weeks."

"I hope so, Professor. You do not bother these people for nothing."

"You won't be disappointed, Maksy."

Silence on the line. "Only one person calls me that," Maksym said. "You are not her. You are a supplier."

Caswell took the garment bag down from the wardrobe and put on his fatigues and his boots, and buttoned the jacket to the neck. On Sundays, in these clothes, men called him Doc.

In the lobby, a heavy man in a grey suit sat in an armchair with a French newspaper. As Caswell went past, the newspaper came down an inch.

Two streets away a very small white car pulled up. Maksym looked at the boots, the trousers, the jacket with its many pockets.

"You are going to a war, Professor?"

"It's practical clothing."

"In my war, the first men we shot were the ones who looked like soldiers and were not."

On the back seat sat the grey backpack, with the seat belt pulled across it and clicked in.

"You put a seat belt on it," Caswell said.

"It is worth more than you," said Maksym.

The factory stood at the end of a street of shuttered warehouses, past the ring road. Inside was one long brick room with iron walkways high along the walls, and under a single work lamp a table with bottles on it. Five men got up when Maksym walked into the light.

"Kapitan!" (Captain!)

The oldest, a thick grey man with a gold tooth, turned Maksym's face to the lamp, looked at the four scratches and said something that made the others howl. Maksym said one word. The laughing stopped.

“Taras,” Maksym said to Caswell, nodding at the man with the gold tooth. Then he pointed at Caswell. “The Professor.” And to Caswell, in English: “Say nothing. If they laugh, smile.”

Caswell smiled. The buyers were not there at midnight, or at one, or at two. In the brick behind the table there were eleven old bullet holes at the height of a man’s chest.

A little before three a long dark car rolled in through the gate. A thin man in a long coat got out, with a younger man carrying a camera with a long lens.

“We did not come to see films of dead presidents,” the thin man said, in Russian. “We came for the page with the diamond.”

“First it has to wake up,” Caswell said. “Then I bring up the page. Davies does it with a laptop, ten flashes of light. I have watched him do it on my camera. I know the pattern.”

“Then wake it up, Professor. My colleague will photograph the page. Our scientists will do the rest.”

Caswell set the backpack on a workbench and opened the flap. He had watched this machine for weeks on a screen. He had never touched it. He plugged the charger into the wall. Three small green lights came on along the side of the pack.

Nothing else.

He pressed the red button under the flap. Nothing. He pressed it again.

“It’s the voltage,” he called. “American equipment. It needs a converter. I can have one tomorrow.”

Maksym walked over, pulled the charger out of the wall, turned it over under the lamp and read the label aloud.

“One hundred to two hundred and forty volts.” He put it down very gently. “In my army I signed for every rifle and every blanket. I read labels. At the airport, Davies touched his phone and the screen lit up. Where is your phone, Professor?”

Caswell stared at the three green lights.

It works for Davies, he thought. Only for Davies.

The thin man looked at the green lights, then at Caswell’s dry mouth, then at his watch. “When it works, you call the embassy,” he said to Maksym, in Russian. “Not before.” He walked out. The long car reversed out of the gate with its lights off.

Taras put his cup down without a sound and looked away from Maksym.

“You lied to me,” Maksym said.

“No, I —”

Maksym's left hand closed on Caswell's throat and walked him back into the brick, and then up it, until his boots left the floor. Then he dropped him into a chair and took a kitchen knife out of his jacket. The price sticker was still on the handle.

"Where I come from, a liar loses the tongue. Then he never lies again. Taras."

Hands took Caswell's head from behind and bent it back. Thumbs pressed the hinges of his jaw, and his mouth came open.

"Please, Maksy, no!"

Maksym went very still. "I told you. Only one person calls me that."

He brought the knife to Caswell's open mouth. The blade was cold on his tongue.

"It knows him!" It came out of Caswell as a wet, broken sound, round the thumbs. "It knows Davies! It only wakes up for him!"

Maksym held the knife where it was.

"Six weeks I watched him," Caswell said. Tears ran into his ears. "It never once failed for him. Not once. He touches his phone and it lights. It knows him. Bring Davies, and it works."

For a long moment nobody in the brick room moved. Then Maksym took the knife away and wiped it on Caswell's sleeve, both sides, slowly.

"Let him go, Taras."

The thumbs left Caswell's jaw. He slid down the chair and sat on the floor with his back against the wall and the eleven bullet holes above his head.

"You see, Professor? Now you are useful." Maksym zipped the backpack shut and lifted it onto his shoulder. "You go back to your hotel. You say nothing to your boss. And when I ask you where the old man sleeps, you know."

"Why the old man?"

"Because Davies will not open his hands for a uniform any more. But for the old man, he will."

He walked out to the small white car and buckled the backpack into the back seat again, carefully, the way a man straps in a child.

Caswell sat on the floor until the sound of the engine was gone. Then he took out the second phone, looked at it for a long time, and did not throw it away.

Scene 38

"It's moving again," Jay said.

For eleven minutes there had been no dot at all. It had left the warehouses after three and gone out. Now it was back, crawling towards Paris on the only road from the warehouses to the ring road.

Hill had stayed at the Centre, to be there when the police called back about Lucien. At the door he had held Jay's arm. "Bring her back with ten fingers, son."

Yvonne drove with the gauze finger held stiff off the wheel. When the street lights passed over her face, Jay could see a bruise coming up along her jaw.

"The sphere came out of a meteorite," she said. "Yes? When a meteorite falls, only the skin melts. Less than a millimetre. The inside stays cold. So a lump of metal round something precious is not a rock. It is packing. A heat shield."

Jay looked down at the dot. *Somebody sent it*, he thought. *Here.*

She backed the Land Rover into the mouth of a slip road, under a dead street light, facing the long straight road. A petrol station closed for the night.

"If he gets into Paris, we never see it again," she said. "If we call the police, they search his car and find a machine nobody can explain, and it belongs to the government for ever."

"I don't care about the machine right now. He nearly killed you."

"That is kind. It changes nothing." She put her good hand on top of the wheel. "This car weighs more than two tonnes. A man who flew in yesterday is driving a rented car, and the rental desks in Paris give you small ones. His will weigh half of mine. He will come down this road fast, because he is angry."

It took Jay a second. "You're going to hit him."

"In the side, behind the driver. I want him to stop."

He looked at her: the swollen lip, the stiff white finger, the pendant at her throat.

"Is there anything you can't do?"

She thought about it seriously. "I can't cook."

She switched off the headlights. On the phone in Jay's hand, the dot came down the road towards them.

Two small lights, low to the road, coming fast.

"That's him."

"Hold on."

She let the little car come until Jay could hear its engine. Then she put her foot down.

The Land Rover came out of the slip road and hit the white car in the side, behind the driver's door. For half a second Jay saw a pale face turning towards them too late. Then the airbag hit him, and the air was full of white powder and a smell like fireworks.

Then it was quiet, except for a ringing in his ears.

In the one headlight that still worked, the white car lay on its side in the grass beyond the road, one wheel still turning.

"The director," said Yvonne, "is going to kill me."

There was white dust on her eyelashes. Jay counted her fingers. Ten, one of them in gauze.

"Come, chéri."

The back window of the white car had burst. In the middle of the back seat, still buckled in, was the grey backpack. Jay pressed the buckle, caught the pack as it dropped, and put it on. His phone buzzed once against his leg, the way it did when the pack knew him.

Only then did he breathe.

"Jay."

Yvonne was looking down through the broken driver's window. Maksym hung sideways in his seat belt with his eyes shut and blood running into one eyebrow. His bandaged right hand lay across his stomach.

Maksym opened his eyes. They found Yvonne's face above the window.

"You," he said. His right hand came up through the window frame, reaching for her.

Yvonne hit him in the face with her right fist, once, as hard as she could.

"For Lucien," she said.

Maksym's head fell back, and his eyes closed. Jay leaned in and watched the chest rise and fall.

"He's breathing."

Yvonne shook her hand and looked at her knuckles. "I have never hit anyone before."

Far down the road, a pair of headlights appeared.

"Now we go."

The Land Rover started on the second try, with one dead headlight and something underneath scraping at every bump. Halfway to Paris Jay started to shake. It began in his knees. He held the pack on his lap with both arms and let it happen.

"He'll come for us," he said. "He knows it only works for me. He'll come for me."

“We need somebody with more money and more people than a museum,” Yvonne said. “His name is Dennis Laurent.”

Jay tried not to ask. He lasted about four seconds.

“Does he call you chérie (darling) too?”

In the light from the dashboard, with white dust still on her eyelashes, she almost smiled. “Everybody calls me that. You will have to get used to it.”

Scene 39

At twenty to seven on Monday morning, a short, stocky man on a bicycle waited at a red light beside the Seine. Thick glasses, a beard, a bare pink patch on top of his head. Over his shoulder hung a faded green cloth bag with a bee printed on it. Inside the bag was a laptop worth more than the bicycle.

Thirty metres behind him a grey armoured car stopped as well. It had followed him to work every morning for six years.

A delivery driver glanced down at the little man on the bicycle, looked away, and checked his phone.

Nobody looks at a man on a bicycle, Dennis Laurent thought.

Journalists asked him once or twice a year why one of the richest men in France rode a bicycle to work. He always said, "To reduce our carbon emissions," and they always wrote it down.

At the next junction a bus pulled out in front of him. Two schoolboys at the back window saw him. One of them puffed out his cheeks to make his face fat, and pointed, and they both laughed.

Dennis stopped smiling. He took one hand off the handlebar and pressed it flat against his chest, over the small gold locket under his shirt. His mother had given it to him when he was twelve, the year the boys at school laughed at him every day.

He kept his hand there until the bus turned off.

On the forty-first floor of the glass tower at La Défense, his assistant met him at the lift with a coffee and a white cardboard box. Inside were six small cakes with pink icing.

He took one. "Our guests?"

"In the lobby since half past six, monsieur. The three men from California. Their data centres will be full in five years, and they cannot build new ones fast enough. They want your advice."

"Is the tall one with the white hair there?"

"Yes."

Dennis looked at the cake in his hand. "Eighteen years ago I flew to California to show that man my work, on a ticket I paid for with borrowed money. I waited in his lobby for four hours. Then his assistant came down and told me he had been called away." He bit into the cake. "Tell them I will be down at eleven."

"That is four hours, monsieur."

"Yes."

On the way to his office he passed the long wall of photographs from the Laurent Foundation for Science: laboratories he had paid for, young people in white coats, his crest on a small plaque in every picture. In one of them, a dark-haired woman stood with her arms folded beside a long grey machine under the Louvre. She was the only person on the wall who was not smiling.

Dennis straightened the frame, although it was already straight.

In his office, the screen on his desk showed the lobby camera. The tall man with the white hair was looking at his watch.

Dennis finished the cake slowly, and watched him.

Scene 40

At ten past four in the morning Hill was waiting in Yvonne's office, his overcoat still buttoned over his pyjama top.

"Did you bring her back with ten fingers, son?"

"Nine and a piece," said Yvonne. She held up the gauze, then her right hand, with the knuckles red and swollen. "And these are new. I hit him. Once. For Lucien."

Hill breathed out slowly through his nose. He went to the staff fridge and came back with ice in a tea towel, and held it on her knuckles himself. "The police called. Lucien is fine. He wants his trousers."

Jay opened the pack. No cracks he could see. Yvonne put the Land Rover key on the desk. "Test it on this. It has been in the car all night."

For two seconds nothing happened, and Jay heard Hill stop breathing. Then the rope of colour came out and touched the key, and a little picture opened: the inside of the Land Rover in the glow of a phone. His own voice, small and thin: "That's him." Hers: "Hold on." Then the picture filled with white.

"Stop it there," said Yvonne. "I do not need to see that again."

"It works," Jay said.

"He knows this building," Yvonne said. "So it cannot stay here, and we cannot keep doing this with three people and a Land Rover. Dennis Laurent has money, men and buildings. He wants his name on something that lasts longer than software. A man who helps you because he wants something is a man you can predict."

"What does he get?" Jay said. "He can't sell history."

"What does the machine do?"

Jay looked at the car key. "This key has recorded every second since it was made, and it's no bigger than my thumb. Every object is recording. The sphere only reads it. The world is running out of room for its data. If we learn how ordinary things store all that, you could keep a whole library in a glass marble."

"That is the part he can sell," Yvonne said. "Not the machine. Never the machine."

"And when a ministry phones him?" Jay said. "A contract is a piece of paper in a drawer."

She was quiet for a moment. "You are right. It is the weak part. I only know that if somebody takes it in the end, I would rather it was somebody with lawyers than a man with a knife at two in the morning."

Hill turned his paper cup a quarter turn on the desk. "I've met men like him," he said, and said nothing more.

Maksym woke hanging sideways in his seat belt in the wet grass. His jaw hurt where the woman had hit him. His right thumb was useless under the bandage. He got his left hand to the buckle and pushed with his whole shoulder until the belt let go.

The back seat was empty. On the floor, among the glass, lay the pill box Maria had marked with the days of the week, split open. The tablets were somewhere in the wet grass, in the dark. He put the empty box in his pocket.

Up on the road, cars had stopped. A boy in a delivery jacket was filming.

Maksym walked away from the lights.

They came from in front, with no lights. They were waiting for me, he thought. The box told them where I was.

Under the sign of a shuttered tyre shop he called Oleg, who had been his sergeant once.

"I need two men, a room outside the city, antibiotics and a car. Not white."

The line was quiet for too long. "I will ask them," Oleg said. In eleven years Oleg had always said "Yes, Kapitan."

"Listen. The machine works only for the American. So we do not take the machine. We take the old one. The black one with the grey hair. And then the young American brings us the machine himself, and switches it on in front of us with his own hands."

This silence was different. "Where do we find the old one?"

"The Professor knows where he sleeps."

Scene 4

At seven in the morning the accelerator hall three floors under the Louvre was empty, and the long grey machine hummed to itself under a row of white lights.

Yvonne had not slept, and it did not show, except in the way she held her bandaged finger away from everything. She set the lump of grey metal on a small table at the end of the beam line, in the place where every week she set a Roman coin or the corner of a painting, and moved it a millimetre at a time until a red dot sat on its edge.

"The beam comes out into the air," she said. "We do not have to put anything in a vacuum. That is why we can use it on the Mona Lisa's cousins. The particles knock electrons out of the atoms, and every kind of atom answers with its own colour of X-ray. Iron sings one note. Copper another. Gold another. We listen to the song and we know what it is made of."

"Will it hurt the sphere?" Jay said.

"The beam goes on the metal round it. Not the ball. I am not a fool, chéri."

Hill sat on a lab stool by the door with his coat still on and watched her, the way he had watched her correct his arithmetic on a blackboard twenty years before.

She switched it on. For four minutes nothing happened except numbers. Then a graph grew on the screen, a row of sharp peaks rising out of a flat line.

"Titanium," she said, pointing. "Most of it. Vanadium. Aluminium. That is a normal recipe for an alloy, for aircraft, for spacecraft. And then this." Her finger moved to a peak nobody had labelled. "And this one."

She typed. The machine thought about it. Two names came up.

Yvonne sat very still.

"What?" Jay said.

"The small one is ruthenium. Rare, but it exists." She did not take her eyes off the screen. "The other one is technetium."

Hill took off his glasses.

"Explain," Jay said, although he already knew. He wanted to hear her say it.

"Technetium has no stable form," Yvonne said. "None. Every atom of it falls apart, slowly, into something else. The longest-lived kind loses half of itself every four million years or so. The Earth is four and a half billion years old. Whatever technetium it was born with is gone. Apart from a few lonely atoms in uranium ore, every gram of technetium on this planet was made by people, in a reactor, in the last eighty years." She turned round on the stool. "This metal has technetium in it. A great deal. Not as dirt. Mixed in on purpose, as part of the recipe."

"So it was made," Hill said slowly.

"It was made. Not by a star, and not by the Earth. By somebody, in a furnace, on purpose. And not very long ago, as stars count time. If it were billions of years old, the technetium would be gone. It has been travelling a few million years, perhaps. Not more."

Nobody said anything for a long time. The machine hummed.

"I have spent my life telling museums when something was made, and by whom," Yvonne said at last. "Every forger in history has made the same mistake. He uses a material that did not exist yet. A white paint, a thread, a nail." She looked at the grey lump at the end of the beam. "This is the same mistake, in reverse. Nobody on Earth could have made this metal. So nobody on Earth did."

She printed the graph, folded it twice and gave it to Jay.

"Your proof," she said. "Not the pictures. Anybody can call pictures a trick. This is a measurement, on a machine owned by the French state, and anybody with a physics degree can repeat it."

Jay put it inside his shirt, next to the green exercise book.

"Thank you."

"Do not thank me." She switched off the beam. "Last night a man nearly took my finger for this. This morning I find out it came from the stars. I am not going home and going back to my varnish, Jay. Whatever you are doing now, I am doing it too."

Scene 42

At ten o'clock on Monday morning the screen behind the lectern still said: *Dr J. Davies, Gladwell Research — A Quantum Precision Meter*. Hill stood under it in his grey suit with nothing in his hands. In the front row a white card sat on an empty chair: DR M. CASWELL.

Yvonne had opened the morning in a silk scarf wound high round her neck, which hid most of the bruise. A man from Munich asked what had happened to her hand. She said, "A drawer," and called the first speaker.

"Dr Davies is unwell," Hill told the room. "I'm afraid you have his boss instead."

He talked about quantum information for thirty-five minutes, from memory, and said "Gladwell Research" three times. *Amanda will count*, he thought.

In the corridor he rang Caswell.

"Stomach," Caswell said, low and careful. "Something I ate. I'm staying in the room." A pause. "How did Davies do?"

"Davies is unwell too. Feel better, Marvin."

Then he went up onto the quai, where the wind came off the river, and rang his younger daughter in California. It was two in the morning there.

"Dad? Is Mom okay?"

"Your mother's fine. Everybody's fine. Sweetheart, that young woman you looked after, the runner with the stress fracture. The one in the FBI. I'd like her number."

A rustle. She was sitting up. "Liz Ortega. Are you in trouble?"

"There's some technology here, and I want to ask somebody sensible how you keep a thing like that out of the wrong hands. It's a question, not a problem."

"Dad. You'd tell me."

"Of course I would."

Seventy-one years, and I never lied to a policeman, he thought. *I just lied to my daughter.*

At five that afternoon he sat on the stone wall by the river and called the number Carla had sent.

"Ortega." A car's turn signal ticked behind her voice, then stopped. "Professor. This is my own phone, and I'm in a garage with the engine off. If you tell me about a crime, I have to do something about it. So think before you tell me things."

Hill thought about it. "What would you say if I told you we have a machine that could settle the Kennedy assassination? Pictures, with sound, seen from the rifle itself."

"I'd say that footage doesn't exist."

"It does. It's inside the rifle. We have a device that takes it out. Last night a man with a knife took it from us. We got it back. A colleague of mine was hurt."

Her voice changed. "How badly?"

"Cuts and bruises. The French police know about the attack. They don't know what he wanted."

"Professor, if you weren't Carla's father I'd send you to a psychiatrist. And I can't take this to anybody without proof."

"Then come and choose the proof yourself. Bring something of your own, and ask it about a day only you remember. Pictures can be faked. Your own memory can't."

"Why me? Why not your company?"

"Because the people who can pay for this won't want to share it. They'll want to be the only ones who have it."

The silence went on. A tourist boat passed behind him with its lights already on.

"I've never been to Paris," she said. "Economy. I pay my own hotel. I come on vacation as Carla's friend. No badge, nothing in writing. And I'm doing this for Carla, Professor. Not because I believe you."

"That's fair."

When she had gone, Hill sat with the warm phone in his hand.

I didn't ask Jay, he thought. I didn't ask anybody.

He opened the airline's website and typed ORTEGA with one finger.

Scene 43

At eight o'clock on Monday morning, California time, Amanda Gladwell stood at the glass wall of her office with the phone at her ear.

"Report, Marvin."

"Davies has been unwell since we landed, Mrs Gladwell." Caswell's voice was low and careful, like a man with a sore mouth. "Hill gave the talk. Nothing to report. A small conference."

"And you? You sound terrible."

"Something I ate."

Amanda had listened to men lying to her down a telephone for fourteen years. Marvin Caswell had never been good at it, and he was worse at it this morning.

"Get well, Marvin," she said, and hung up.

Something happened over there, she thought. And he's more frightened of it than he is of me.

She opened the laboratory's purchase orders. It took her four minutes. *Requested by R. Lamrani. Approved by J. Hill. \$1,140.62.* Twenty ultraviolet laser diodes. One infrared laser diode. One copper block. Three lithium cells. One hiking backpack, grey.

"Send Mr Lamrani up."

Rashid came in six minutes later and sat with his hands flat on his knees.

"Twenty-one lasers, Mr Lamrani. For a light meter."

"Twenty for calibration, Mrs Gladwell. The meter checks itself against a light it already knows. The other one is a safety switch."

"And why does a Gladwell instrument travel in a hiking backpack, and not in a case with our name on it?"

"A case with a name on it goes in the hold, Mrs Gladwell. This did not go in the hold."

"Has Dr Davies been in touch?"

"He sends me a message when something breaks."

"Did something break?"

Rashid said nothing. Amanda said nothing either. It was her oldest trick: stay quiet, and the other person always starts talking to fill the silence.

The clock on the wall ticked. Ten seconds. Twenty. Rashid looked back at her politely, his hands still on his knees.

Amanda looked away first.

“Nothing is broken, Mrs Gladwell,” he said.

When he had gone, she unlocked the filing cabinet and took out a thin file: DAVIES, J. Page four, paragraph 11(b): every invention made during employment belongs to Gladwell Research, whether or not it is made on company premises or in working hours. At the bottom were Jay’s initials in blue ballpoint.

She put her finger on them.

“It belongs to me,” she said to the empty office.

Scene 44

Liz Ortega came through the doors at Charles de Gaulle on Tuesday with one small bag on wheels. She saw Hill before he saw her: a tall old man in a jacket too warm for the day, standing where he could watch both exits.

“Agent Ortega.”

“Liz. For the next few days I’m Carla’s friend, on vacation.”

In the taxi he began, “So. The position is—”

Liz looked at the back of the driver’s head. He stopped. They talked about Carla’s new apartment all the way into the city.

At the hotel she said, “Let’s walk. It’s hard to listen in on two people walking.”

Along the river she waited until nobody was near them.

“I brought something of my own. I’m not telling you what it is, because you’d tell whoever runs the machine, and he’d have time to get ready for it.”

“Yes. I probably would.” Hill told her the rest: Jay, Yvonne, the strongroom, the Land Rover in the night. “Tonight at eight Jay shows it to a rich man called Dennis Laurent, at Yvonne’s apartment.”

“And you want me there.”

“In the hall. Jay doesn’t want any government near it. If I tell him you’re coming, he says no.”

“Jeff, I have no badge in this country. I can’t arrest anybody, take anything or protect anybody. I can look and listen. And two conditions. I don’t hide. If somebody walks into that hall, I tell them my name and what I do for a living. And I touch nothing.”

“Agreed.”

At the hotel door he said he would come for her at a quarter to eight. Upstairs she opened the note on her phone: *Carla’s dad. Paris. Technology. Wrong hands.* Under it she typed *Dennis Laurent.*

Scene 45

The door of Yvonne's flat had a small round spyhole, and Dennis watched it go dark. Somebody was looking at him.

He knew what they saw: a short, stocky man with thick glasses and a beard, holding a bicycle, with a faded green bag with a bee on it hanging from the handlebars.

The door opened on the chain. A tall, unshaven man in a creased shirt looked at the bicycle, then at the bag.

"Sorry. We never order food."

"I am Dennis. I ride a bicycle to help keep emissions low."

The man's face changed. "Oh. God. Sorry. Come in."

Yvonne came out of the room at the end of the hall, and Dennis stopped. Her lower lip was split and swollen. A bruise ran along her jaw. The little finger of her left hand was wrapped in gauze.

"Who did this?"

"Later, chéri." She kissed him on both cheeks, carefully, because of the lip.

In the living room a tall old Black man stood up from the table. "Jefferson Hill."

"Enchanté." (Pleased to meet you.) Dennis took a white cardboard box out of the green bag and put it on the table. Six small cakes with pink icing. "I did not know what people eat at a time like this."

Nobody took one.

Yvonne's grey cat lay across a grey backpack on a chair by the window. She had named him Titane, after the titanium that caught her forger. He opened one eye at Dennis and closed it again.

"So," Dennis said. "Show me."

"I need an object," Jay said. "Something of yours, with a history only you would know. It will show you what that object saw and heard. If it's yours, you'll know it's real."

Dennis's hand went to his collar before he had decided anything. He undid the clasp with two fingers and put a small gold locket in Jay's palm. The edges were worn smooth. It was still warm.

"It was my mother's."

Yvonne closed the blinds. Jay lifted the cat off the backpack and put the pack on. A thin rope of light came out of a flap in its side and touched the locket, and a picture opened in the air above the table: the ceiling of Yvonne's living room, seen from the table top.

Dennis got up, walked round the table and put his hand where the projector had to be. Nothing. He put his hand into the picture. His fingers came out through the ceiling.

"Ce n'est pas possible," he said quietly. (It is not possible.)

Jay turned the wheel back through faces and drawers and boxes. The numbers at the bottom stopped: 4 July 1957.

"That's the bottom. The day the gold was cast. Metal only remembers back to the last time it was melted."

"Christmas morning," Dennis said, and told him the year. "Early."

Dark, and the sound of paper. A hand opened a box, and a woman's face looked down into it, close. She was tired, and she was smiling.

"My mother," Dennis said.

She was younger than I am now, he thought.

"Are you convinced?" Jay asked.

"One more thing." Dennis's voice was thick. "The morning after my final exam results. My father did not come to see the results. That morning something happened that only my parents and I know about."

Jay found the morning. "This is better from inside. Don't walk. The furniture is still here, even when you can't see it." He held out his hand. "Yvonne, hold on to me."

"I'll stay out here," Hill said. "I've done it before."

Jay pressed 3D, and the room faded.

They were standing in a kitchen with brown cupboards, and the kitchen was enormous. The wallpaper had small yellow flowers on it, each one as big as a car. Dennis had not thought about that wallpaper in thirty years.

Behind them rose a wall of grey cotton. A T-shirt. Very far above, the underside of a boy's chin. He knew the chin.

Across the kitchen a giant man in yesterday's shirt was shouting, unshaven, his eyes red. A woman in a dressing gown shouted back.

"Translate," Jay said quietly.

Dennis's voice was flat. "She says: 'You could not come once? It was your son's results.' He says: 'Somebody has to make money in this family.' She says: 'You were not making money when you came home drunk last night.' He says: 'Shut up. You always shame me in front of the boy.'"

The man came across the kitchen towards the door. The woman did not move out of his way. He put his hand on her shoulder and pushed, hard.

She fell sideways. Her head hit the corner of the counter with a sound like a door slamming. She lay on the floor and did not move.

The man stood over her for a second. Then he walked out.

The locket hung on the boy's chest, so the picture moved whenever the boy moved. It did not move. Not when the man pushed her. Not when she fell. Not when he walked out. The boy stood exactly where he was.

"Stop," Dennis said. "Stop it. Now."

They were three people standing in a dark living room, holding on to each other. Dennis let go first and sat down.

"A slight concussion," he said after a while. "They were divorced within the year." He put his hand flat on his chest, where the locket usually hung. "I wanted to kill him. You saw. I did not move."

Jay gave him back the locket. Dennis closed his hand round it.

"What do you need?" he said. "I will support you."

"We were attacked," Yvonne said. "He almost killed me, and he took it. We took it back."

"He knows now that it only works for me," Jay said. "And a man at my company sold it to him. Marvin Caswell."

"If this becomes a weapon, or falls to organised crime, it is a catastrophe," Dennis said. He took a cake out of the box, looked at it and put it back. "Let me make some calls. I have friends who can protect us."

"Why does somebody as rich as you ride a bicycle with no protection?" Jay said.

"There is a grey armoured car thirty metres behind me, all the time, with two men inside." Dennis shrugged. "I write software. I am not stupid. Money brings criminals."

He stood up with the locket in his fist and went out into the hall to phone in private.

A woman was standing in the hall beside his bicycle. She was about forty, in a dark jacket, with her hands empty and in plain sight. The front door was closed behind her.

"Good evening," she said. "My name is Liz Ortega. I work for the FBI."

Scene 46

"Jay," Dennis said, without turning round. "Yvonne. There is a woman here from the FBI."

"I let her in," Hill said from the living-room doorway. "While you were inside the globe. Liz is a friend of my daughter's. I called her on Monday."

"Monday," Yvonne said. "You were with me at the Centre on Monday, and you said nothing. In my home, Jefferson. Two nights ago a man almost killed me for that machine, and tonight you open my door to a stranger."

"That's exactly why." Hill kept his voice low. "At three in the morning the two of you went after an armed man with a tracker on a phone. He could have cut your throat. We're scientists. None of us would know we were being followed if the man sat next to us on the bus. Dennis has an armoured car and two armed men because he has money. We have something worth more than all his money. And who do we have to defend us?" He pointed at the chair by the window. "Titane? A cat?"

The cat flicked one ear and did not wake. Nobody laughed.

"I asked the one professional I trust to come and look before we did anything else stupid."

"He didn't hide me," Liz said. "I gave my name to the first person who found me."

"You could have told me, Jeff," Jay said.

"You'd have said no."

"Yes," Jay said.

Hill took his coat from the hook. "I'll take Agent Ortega back to her hotel. We'll talk in the morning."

The street was wet and quiet. Thirty metres down, the grey armoured car sat under a street light.

"Now do you believe me?" Hill asked.

"What I saw from the hall was impressive. It meant nothing to me personally." Liz touched the inside pocket of her jacket. "I brought something of my own. I'll need —"

Two men came out of the dark between the parked cars. A hood came down over Hill's head. It smelled of old cloth and petrol. An arm locked round his chest and lifted him. He heard Liz shout once. A sliding door. A metal floor under his knees.

A plastic tie went round his wrists and tightened with three clicks.

The hood came off. A phone screen lit the inside of a van. A man in a ski mask was tying Liz's wrists. In front of Hill sat a big man in a good suit gone dirty, with a bandage round his right hand, a cut across his forehead, and four scratches down one cheek.

“Good evening, Professor. Mr Caswell told us where you sleep. You did not look behind you once.” He leaned closer. “Now we find out if Dr Davies is willing to let you and your friend die.”

Liz threw herself at the voice with her hands tied behind her. The big man drove his forehead into her face. She fell back against the side of the van with blood running from her nose.

“What do you want?” Hill said.

“The damn machine. Dr Davies and his woman put me in a ditch and took it. I have not finished with them.”

Scene 47

The hood smelled of petrol and somebody else's sweat, and through it Hill counted the turns, the way he had counted plays on a football field sixty years before. Left. Long straight. Right. A ring road, by the noise of it. Thirty-five minutes.

Beside him on the metal floor, Liz breathed through her mouth. Her nose was broken. He could hear it.

"Liz," he said quietly.

"I'm here, Jeff."

"Don't be brave."

"Too late," she said.

The van stopped. Doors. Gravel. A smell of beer and frying oil. Hands pulled them out by the arms and pushed them across a yard and through a metal door, and a bolt went across behind them.

The hoods came off.

A small back room, bright, under one bare bulb. Beer crates stacked to the ceiling. Two wooden chairs. A man in a ski mask pushed Hill down onto one and tied his wrists behind him and his ankles to the legs, quickly and tightly, like somebody who had done it to a great many people. Then Liz.

The big man pulled a crate over and sat on it. Close up he was older than Hill had thought, with a grey stubble and small pale eyes, and four fresh scratches down his left cheek under a purple stain. His right hand was wrapped in a dirty bandage. On his left wrist was an old steel watch with a scratched face.

"Who is the woman?"

"A friend," Hill said.

"What was she doing in the apartment?"

"That's none of your business, you —"

The big man hit him across the face with the back of his bandaged hand. Then he shut his eyes for a second and held the hand against his chest.

"Coward," Liz said.

He looked at her for a long time, the way a butcher looks at a side of meat. Then he reached into Hill's jacket with two fingers and took out Hill's phone.

"The code, Professor."

Hill said nothing. The big man looked at Liz, at the blood on her lip, and took a kitchen knife out of his coat, and waited.

Hill gave him the code.

The big man scrolled with the tip of one finger until he found DAVIES.

“You know what is funny, Professor?” he said, without looking up. “Your boy will not open his hands for anybody. Not a policeman. Not a soldier. Only for you.” He pressed the name. “Now. Let’s ask Dr Davies for his cooperation, eh?”

Scene 48

Jay stood at Yvonne's window with the pack on his back. The grey car was still down in the street. Hill and Liz were gone.

In the hall, Dennis's phone rang. He listened, and his voice went up. "My men saw it. Dr Hill and the woman were pushed into a van with bags on their heads. My men did not follow. Their job is to protect me."

Yvonne had her phone out to call the police. Dennis said, "And what will you tell them they wanted?" She looked at the backpack on Jay's shoulders, and did not dial.

Jay's phone rang. HILL.

"Dr Davies." A man's voice with a heavy accent. "Here is someone who wants to talk to you."

"Jay." Hill, close to the phone. "Liz is with me. They hit her. Son, don't you dare —"

A sound like a slap, and the accent came back.

"You bring the machine. You alone. You carry it. You switch it on in front of me. Forty minutes. I send you the address. If I see one policeman, they die first. The woman first."

The line went dead. A second later a message arrived: an address, north-east of the city, and a photograph of Hill tied to a chair with blood at the corner of his mouth.

Yvonne put her hand over her mouth.

"I will call my men," Dennis said. "They were soldiers. They can —"

"They can carry pistols and wear vests, and protect you," Jay said. "You told me that yourself. They aren't allowed to attack a building. And if three armed men walk into that bar, he shoots Jeff before they're through the door."

"So you walk in alone with the thing he wants," Yvonne said. "And then he has the machine, and Jefferson, and you."

"No." Jay took the pack off and set it on the table and opened the flap, and his hands were steady, which surprised him. "Listen to me. Both of you. When I press 3D, the picture bursts out into a globe eight metres wide. Anybody touching me goes inside it with me. Anybody who isn't touching me gets pushed out, across the room, against a wall they can't see. I watched it push Jeff back across my lab like a tide. Nothing gets through that skin. Not a hand. Not a phone signal. I stood inside it and my phone said NO SERVICE."

Dennis took off his glasses.

"He wants me to switch it on in front of him," Jay said. "Good. I'll switch it on. I get close to Jeff and Liz. I touch them both. I press one button, and for as long as I want, they're inside something nobody in the world can get into."

"And then?"

"And then your men come in." He turned to Dennis. "Not to attack a building. To save two lives. That's what they're licensed for. Yvonne, I'll call your phone before I go in and leave the line open in my pocket. You'll hear everything. The second the line goes dead, that's the globe. That's when they go."

Yvonne looked at him as if she had never seen him before.

"You thought of all this in the last two minutes?"

"I thought of it in the lab, two weeks ago. I just didn't know what it was for." He closed the flap. "Dennis. Can your car get us there in forty minutes?"

"Thirty-five, at night," Dennis said, "if we do not stop at the lights." He was already dialling. He spoke fast in French. Then he closed his eyes. "They will come. As far as the door. Not one step further until the line goes dead."

"And I am coming with you," Yvonne said, zipping a jacket up to her bruised jaw.

"You're staying in the car."

"Jefferson is my friend. That animal tried to cut off my finger. I will sit in the car, chéri, because you asked. I will not sit in my flat."

Jay looked at her for one second longer than he needed to. Then he nodded, and lifted the pack onto his shoulders, and the left strap came down on the chip like a hand.

If this doesn't work, he thought on the stairs, it was my idea, and Jeff dies of it.

He went down faster.

Scene 49

The bar had a red sign and football on a television with the sound off. Three big men sat at a table near the back, and a fourth sat on a chair in front of a door, with his coat open.

Jay walked in with the pack on his back and his phone in his shirt pocket, and the line to Yvonne open, and every man in the room looked at him.

The one by the door stood up. He was thick and grey, with a gold tooth. He searched Jay quickly, the way a man searches who has done it in a war: armpits, waist, ankles. He found the phone and held it up.

"Leave it," said a voice from behind the door. "The Professor says it wakes up for his phone."

The man with the gold tooth put the phone back in Jay's pocket, opened the door, and pushed him through.

The back room was small and bright under one bare bulb. Beer crates to the ceiling. Hill and Liz on two wooden chairs, their wrists tied behind them. Hill's lip was split. Liz's nose was dark and swollen across the bridge. Hill looked at Jay and closed his eyes for a second, and Jay understood that it was not relief. It was the look of a man who had hoped he would not come.

The big man sat on a crate with a pistol in his left hand. The bandage on his right was dirty. The four scratches on his cheek were healing in their purple stain.

Erwin, Jay thought, and it steadied him more than anything else could have.

"Dr Davies. We meet again. Last time it was dark, and you were in your underwear." The big man smiled. "I am Maksym. Put it on the table. Switch it on. Show me."

Jay set the pack on an upturned crate an arm's length from Hill's chair and opened the flap. He kept his hands slow.

"It needs an object," he said. "Something with a past. It shows what that object saw."

"Use his." Maksym pointed the pistol at Hill.

"I've seen everything Jeff owns." Jay looked at the old steel watch on Maksym's wrist.

"That's a Soviet army watch. You've worn it a long time. If you want to know whether this is a trick, give me something only you know about."

For a moment Maksym did not move. Then he laughed, short and hard, unbuckled the watch with his teeth and his good hand, and tossed it onto the crate.

"Show me, scientist. Show me my life."

Jay laid the watch face up and touched his phone. The rope of colour came out of the side of the pack and touched the scratched glass, and a picture opened in the air above the crate: this room, the bulb, the beer crates, and Maksym's own face, huge, looking down.

The man with the gold tooth swore softly. Behind him, in the doorway, the other two had come to look.

Jay spread the picture to the width of his arms and turned the wheel back, and back. Years went by in flickers. The inside of a sleeve. A garage. A kitchen with a brown stain on the wall behind the stove. An airport. Snow. Further.

“Stop,” Maksym said. “Enough.”

Jay did not stop. He did not know why. Some part of him had seen Maksym’s face change when he unbuckled the watch, and had understood that this was the thing the man was afraid of.

The pictures slowed. A grey morning. A village of low houses and mud. And then a room.

A classroom. A map on the wall. A stove with a bent pipe. The view was from a wrist, at the end of a straight arm, and at the end of the arm was a pistol, and beyond the pistol a line of men stood against the wall under the map, in old coats, with their hands on their heads. Somebody was crying. A young voice, hoarse, in a language Jay did not know, was shouting the same question again and again.

The man with the gold tooth made a sound in his throat.

“Ternivka,” he said.

Everyone in the back room turned to look at him. He was staring at the picture with his mouth open.

“I was there,” he said, to nobody. “I was nineteen. I held the door.” He looked at Maksym. “You never found out if it was the right name.”

In the picture, the arm moved. The pistol came round to the fifth man in the line.

“TURN IT OFF!”

Maksym was on his feet with the gun pointed at Jay’s face.

Jay stepped sideways, towards the chairs, with his hand already on the phone.

The shot was enormous in the small room.

Hill had pushed with both feet and thrown himself sideways, chair and all, into the space between them. The bullet hit him in the stomach. He landed on his side on the concrete, still tied, and did not make a sound.

Jay was on his knees beside him before he had decided anything. His left hand went flat on Hill’s shoulder. His right found Liz’s arm, behind her chair, and held it.

He pressed 3D.

The world burst open.

Something soft and very strong swept outwards from the crate, through the beer, through the walls. It caught Maksym in the chest and carried him backwards across the room like a man in a flood, and slammed him into the stacked crates, and bottles came down round him. It caught the two men in the doorway and threw them back into the bar.

And the room changed.

The back room was still there, faint, like a reflection in a window. But through it, enormous, rose the classroom in Ternivka. The map hung across the ceiling. The stove stood as tall as a house. And the line of men against the wall stood frozen, each one the size of a tree, with their hands on their heads, while Jay knelt between them on a floor of old boards, eleven centimetres tall, with one hand on a bleeding man and the other on a woman tied to a chair.

"Jay," Liz said. "Jay. What is this?"

"It's a picture. It can't touch you. Nothing can. Hold still."

Outside the skin of the globe, the dim shape of Maksym got up out of the broken bottles. He raised the pistol and fired at them.

The skin shook. Rings of colour raced across it, round and round, the way they did when you hit it with a fist. And the bullet came back. Exactly the way it had gone, exactly as fast. It hit the hand that held the pistol, and the pistol spun away, and Maksym screamed.

Jay stared.

It gives back what you give it, he thought. Everything. Even that.

In his shirt pocket, his phone had gone silent. The line to Yvonne had died the moment the globe opened.

Through the faint wall of the back room he saw the door to the bar crash open. Two men in black vests, pistols out in front of them, shouting in French. Behind them, a short man with a beard.

Maksym was already gone, out through the metal door into the yard, holding his left hand against his chest, the gold-toothed man after him, and an engine starting outside.

Jay looked down. Hill's face was grey. His eyes were half open. There was blood on the boards of a Ternivka classroom that was not there, and on the concrete floor that was.

"Stay with me, Jeff."

"Some demonstration," Hill whispered.

Jay hit QUIT 3D. The classroom vanished, and the bar came back, all at once, full of noise and broken glass, and Yvonne running through the door with her phone at her ear, shouting an address at the emergency service in French.

On the crate, in the light from the bulb, the old steel army watch lay face up where Maksym had left it.

Jay put it in his pocket.

Scene 50

The ambulance stood in the yard with its back doors open and its blue light turning on the wet concrete. Yvonne had called it from the doorway of the back room, before she knew what she would find, and then sat on the floor with Hill's head on her knees.

In France the emergency service, the SAMU, sends a doctor in the ambulance. The doctor's jacket said MÉDECIN on the back. Dennis pushed through to him, and the doctor answered in English, for Jay. "A man shot in the stomach goes to a trauma centre. The SAMU decides where, not the family and not the money. We go to Beaujon. One person in the back."

"Dr Davies does not speak French," Yvonne said, and climbed in behind Jay. The doctor let it go.

Jay sat on the narrow bench with his knees against the stretcher. Through the back window he saw Dennis's car pull out behind them with Liz in it, a wad of paper towel pressed to her nose.

Hill's face was grey. His eyes were half open and did not look at anything. A bag of blood swung from a hook above him with the turns.

The line on the monitor was a row of small, quick bumps. Then it went wild, a jagged scribble with no bumps in it at all.

"Il fibrille. On le perd." (He's fibrillating. We're losing him.)

"What did he say?"

"They are losing him," Yvonne said.

Jay grabbed her hand. "Tell them to do something!"

"They are doing it."

The doctor tore Hill's shirt open and pressed two pads onto his chest. A machine began to whine.

"Écartez-vous!" (Stand clear!)

Hill's body jumped on the stretcher and fell back. The line was still a scribble.

The machine whined again. Hill jumped again.

The scribble broke. One bump, then a gap, then another, then a row of them, small and slow.

Nobody spoke for the rest of the way. Jay did not let go of Yvonne's hand.

At Beaujon a team took the stretcher at a run, and the doors closed behind it.

The waiting room had plastic chairs, a coffee machine and a clock. Dennis sat very straight. Liz sat with her head back and the towel on her nose. "I'll call Carla," she said. "She should hear it from somebody she knows."

The clock said one. Then two. Jay walked to the window and back.

"This is my fault. I found it. I switched it on. I should have left it in the attic."

"And then what?" Yvonne said. "Somebody else finds it one day. Somebody like him. Jay, it is the only proof we have that we are not alone. You do not destroy that because a criminal wants it."

He sat down beside her. After a while he rested his head on her shoulder. She put her hand against his face and left it there.

Scene 5!

At ten to four a tired man in green scrubs came through the doors with a paper cap in his hand.

"He is alive," Yvonne said, listening. "They stopped the bleeding and took out the bullet. The next hours are the most important. He says Jeff is very strong for his age. That is what saved him."

"He played football in college," Jay said. "He never stopped training."

Jay sat down in the nearest chair and put his face in his hands.

"My man will sit outside his door all night," Dennis said.

"I'll stay too," Liz said. "He jumped in front of a bullet for me."

A man in a grey suit and a rumpled raincoat came down the corridor from the lifts and showed Dennis a card with a red, white and blue stripe.

"Capitaine (Captain) Leclercq, police judiciaire (criminal investigation police)." He looked at Liz. "You are the woman who was taken from the street?"

"Liz Ortega. A friend of his daughter's. I'm visiting Paris."

"And then somebody called you," Leclercq said to Jay.

"The kidnappers. They wanted money." Jay nodded at Dennis. "They knew he was with us."

"And you did not call the police."

"They said they would kill them first if they saw police," Dennis said.

"They all say that. It is why we exist." Leclercq turned a page in his notebook. "There is blood in the yard that is not your friend's. And a pistol under the beer crates that fired two shots. One is in your friend. The other one, I think, is in the man who fired it." He looked up. "Two witnesses in the bar say the room went white and the big man flew across it. They had been drinking since lunch, of course."

Nobody answered.

Leclercq's eyes went to the backpack between Jay's feet and stayed there a second. Then they came back up.

"Please do not leave Paris." He took the card Dennis held out, read the name on it, and put it away very carefully in the pocket with his notebook. "Monsieur Laurent. Of course. Good night."

When the lift had closed on him, Yvonne let out her breath. "We cannot go to my flat. That man knows where I live."

The hotel was a small one behind the Louvre, and the night man gave them the only room he had left. It had one bed.

Jay looked at the bed, then at the small sofa. "I'll take the couch."

"Jay," Yvonne said. "You are not the first man to sleep in a bed with me, and you will not be the last. Lie down and sleep."

He lay down in his clothes on the far side of the bed and was asleep before she had taken her shoes off.

Yvonne lay on her back. Her jaw hurt. Her finger throbbed. When she closed her eyes she saw the grey face in the ambulance and the scribble on the monitor, and she opened them again.

A week ago my worst problem was a crack in the varnish of a painting, she thought.

The pack sat on the chair in the light from the street. With that box nobody would ever need to guess where a painting came from again. They would just look.

It will put me out of a job, she thought. And I don't care.

Jay was asleep on his side with his hand still in a fist on the pillow. She pulled the blanket up over his shoulder, and lay down again, a little closer than before.

Scene 52

The van stopped under a motorway bridge at half past eleven. In the back, Maksym sat on the metal floor with his left hand wrapped in a bar towel, red all the way through. The bullet had gone through the middle of the palm, his own bullet, and he still did not understand how.

The driver turned round. Oleg, Maksym's old sergeant, had found the men for the kidnapping. "Oleg says get out, Kapitan. Thirty people in that bar saw your face, and the police have your pistol. Oleg says he cannot take any more risks."

"You ran."

"We carried you out." In the front seat Taras sat with his eyes on the windscreen and did not turn round. He had not spoken since the bar. "Get out."

Maksym got out. The van drove away up the slip road.

No more associates, he thought. And the old fool by the door was at Ternivka. Now everybody knows.

At ten past three in the morning he caught Yvonne's street door behind a young couple coming home and climbed the four floors with his shoulder against the wall. He worked the lock with two thin picks in the fingertips of his right hand. The bitten skin opened under the bandage. It took him six minutes.

The bedroom was empty. No backpack. In the living room his torch found a white cake box on the table and two green eyes on the chair by the window.

The cat did not move. It lay in a ball and watched him.

Maksym's left hand went up to the four scratches on his cheek before he knew it had moved.

"Where is she, eh?"

The cat yawned.

He backed out and pulled the door shut behind him.

In a hotel behind a railway station, where the night man took cash and did not look at his hands, he switched on Hill's phone. Nine missed calls from CARLA. One message:

Dad, Liz says you're at Beaujon, in intensive care. I'm on the first flight. I love you.

Maksym read it twice and switched the phone off, so nobody could use it to find him.

"Beaujon," he said to the wall. "Davies will be by his bed. And the French woman."

He lay back on the bed with the kitchen knife on his chest.

Scene 53

At twenty past eight the phone woke Jay. LIZ.

"He's awake. He's asking for you."

Yvonne was sitting up beside him with the blanket round her shoulders. She put her arms round him, and he held her. Neither of them let go when they should have. Then they both let go at once. Yvonne looked at the gauze on her finger. Jay looked for his shoes.

They took a taxi to the hospital. Jay sat with the pack on his knees and Maksym's watch in his fist inside his jacket pocket, and looked out at Paris without seeing it.

"He was afraid of it," he said. "Not the machine. The watch. When I went back far enough, he was afraid."

"And the old man with the gold tooth," Yvonne said. "He said he held the door." She looked at him. "What did they do in that room, Jay?"

"I don't know. I don't want to know." He opened his hand and looked at the scratched steel face. "But somebody should."

Outside intensive care Liz sat on a plastic chair with her nose swollen and dark across the bridge. Dennis sat beside her with a white cake box on his knees.

"This is out of control," Jay said. "And it's me he needs. He knows it now."

"Then you cannot keep it in a backpack any longer," Dennis said. "You must give it to people strong enough to protect it. There is the International Science Council, here in Paris. The science academies of the world, not their armies. Nobody owns it."

"It isn't mine to give," Jay said. "Page four of my contract. The pack was built in Amanda's building."

"Then we need lawyers before we need scientists. I have lawyers."

A nurse looked out. "Monsieur Davies? Five minutes. One person."

Hill lay on his back with a tube in his arm and oxygen under his nose. His face was grey against the pillow. His eyes were open.

"Liz?" he whispered.

"She's fine."

Hill closed his eyes. "Good."

"Dennis wants to give it away. Today. To scientists, with lawyers."

Hill opened his eyes again and found Jay's face.

“You found it, son. It’s your decision. Not Dennis’s. Not mine.”

His eyes closed. On the screen beside the bed the green line went on counting.

Scene 54

On Thursday afternoon they moved Hill to an ordinary room on the surgery floor. Dennis's guard carried his chair from the doors of intensive care to the new door and sat down again. On the chair in the corner stood a clear plastic bag marked HILL J.: his shoes, his belt, his jacket. Carla had landed at seven and was asleep in the family room.

Leclercq came in at four without waiting for an answer.

"Professor. You are better. Good." He turned to Liz. "Madame Ortega. I have a pistol with two shots fired, and fingerprints that are on no file in France. I have blood in a yard. I have thirty men from a bar who saw nothing, and two who say the back room went white and a big man flew across it like a leaf." He closed his notebook. "What I do not have is a face. Without a face, a judge gives me nothing."

"I saw his face for an hour," Liz said. "I can describe it."

"A description is a drawing, madame. A lawyer laughs at a drawing."

"Capitaine," Jay said. "Can we talk outside?"

In the corridor he said, "There may be video of the back room. Dr Hill was wearing a camera in a button of his jacket. Gladwell makes them. It's a trade secret, so I can't give you the jacket. But I can take the video out and give you a copy."

Leclercq looked at the backpack on Jay's shoulder, the way he had looked at it in the waiting room.

"Tomorrow morning, Dr Davies. Before he leaves France."

When he had gone, Yvonne came out behind Jay. "What camera, chéri? Jeff has no camera."

Jay looked through the doorway at the plastic bag with the dark jacket folded inside it.

"We have the best recording device in the world."

At one in the morning in the hotel room, Jay laid Hill's jacket flat on the table and pointed his phone at the empty air above it.

"A button camera sees flat," he said. "So the film has to be flat. No globe."

The beam touched the top button. He wound back to Tuesday night. Black cloth, a van floor. Then the back room from the middle of Hill's chest: the beer crates, the bare bulb, Liz with blood on her lip, the man in the ski mask pulling the last tie tight. The big man sat down on a crate in front of them, and his face filled the picture: the stubble, the small pale eyes, the four scratches in their purple stain.

"We stop before I walk in," Jay said. "After that the machine is in every frame."

"And the shot? Leclercq needs the man who shot Jeff."

“The shot comes after. With the machine on the crate and Ternivka in the air.” He shook his head. “We give him the face and the knife and the phone call. That’s enough for a warrant. The rest, he has to trust me.”

Eleven minutes and twenty seconds. On the phone it looked like what it was meant to look like: a small camera on an old man’s chest, shaking when he breathed.

At nine on Friday morning Leclercq watched it twice at his desk with his raincoat still on. He stopped it on the big man’s face.

“And the rest? Dr Davies walking in? The shooting?”

“The battery died. It’s a very small camera.”

Leclercq looked at him for a long time. “In France a judge may look at any kind of proof, but he decides what it is worth. One day he will want to see your very small camera.” He ran it back and stopped on the face: the cut across the forehead, the four scratches. “This face goes to Interpol this morning. Every airport. Every station.”

At the door Jay stopped with his hand on the frame.

“Capitaine. If somebody wanted to know what a man did a long time ago, in a village called Ternivka, who would he ask?”

Leclercq wrote the name in his notebook without looking up.

“Somebody in The Hague,” he said. “Why?”

“No reason. Not yet.”

When they had gone, Leclercq sat and looked at the face for a long time. Then he looked at the word in his notebook.

Scene 55

At half past midnight the only light on the fourth floor of the institute was in Colonel Anatoliy Kushnir's office. On his screen a grey truck with nobody at the wheel saw a cardboard child in the snow and stopped by itself. He rewound it and watched it stop again.

He was short and thin, with his hair cut like a soldier's, and he moved in quick small jerks, like a squirrel in a hurry. The institute belonged to the state company that made everything the army of Krakughystan used. Kushnir ran its research.

His phone buzzed. A French number.

"Comrade Colonel. It's Belenko. Gambalia. The crates for the rebels. You remember."

Kushnir stopped the truck on the screen. "I remember you disappeared. Fifteen years in America. In the army we have a word for that."

"This call is about business. Big business."

"I will call you back."

He took a second phone, old and plain, out of the bottom drawer and dialled the French number from it.

"Now talk."

"Two American scientists have a machine. It shows the past, in pictures and sound, out of objects. A shoe. A lock of hair. Anything. And out of the same machine the young one grew a crystal. With that crystal you build a computer that opens every code. Every bank. Every army. I have video of all of it. And the machine works only for the young American. I need scientists who can make it work without him."

"Anybody can make video now. A computer can put any face on anybody."

"Then let your engineers explain it. If it is fake, you never hear from me again."

Kushnir picked up a pen and wrote one word on the pad in front of him. He underlined it twice.

"I will send you a link," he said. "Put the video there."

At a quarter past four the next afternoon, the major from the video laboratory called back. He spent his days checking films that terrorists put on the internet, and films a computer had made from nothing.

"Colonel, I have never seen anything like it. Every camera chip has tiny faults that leave the same faint pattern in every frame. When somebody edits a video, the pattern breaks. In these two it never breaks. And the light from the picture falls on the real benches and on

the man's face, and moves when the picture moves. You can fake a picture. It is very hard to fake the light it throws on everything around it. Something in that room is making light."

"Destroy everything I sent you."

"It is already done."

Kushnir put the phone down. On his screen the baby still stood on the carpet with one foot in the air.

Whoever owns this can watch any room in the world, in the past, he thought. And read every message every army on Earth has ever sent. He thought of the generals on the fourth floor, and the bigger country to the north that told them what to do. Nobody will tell Krakughystan what to do again.

He did not delete his copy.

Scene 55

At three on Friday afternoon Hill was asleep in his room with his glasses folded beside a jug of water. Dennis came in with a fresh white box of pink cakes and lowered his voice.

"I called three friends at the International Science Council last night. They do not believe me. They want to see it work. And they will not support it unless it can be built again. In science, a result nobody else can repeat does not count. One of them called it a magic trick."

"I showed them Yvonne's graph," Dennis went on. "The technetium. That, they believe. One of them did not sleep after it. So now they believe the ball is not from here. And now they are frightened, because nobody knows how it works, or who can make it work. They want to see it built again, piece by piece, by people who are not you."

"Nobody on Earth can make another sphere," Yvonne said.

"The sphere, no. But the box? Somebody built the box. Are there drawings?"

"Nothing," Jay said. "There's one part I can't get into. A button that says DANGER. It asks for a fingerprint."

Yvonne turned to him. "You never told me this."

"I promised Jeff I'd never press it."

"A lock," Dennis said. "So there is something behind it. Perhaps the drawings."

"Perhaps. Or perhaps something that hurts people. He didn't leave a manual. He left a warning. And whoever he was, he's dead. His family gave his things to a thrift store. His finger is in a grave."

Dennis took off his glasses and rubbed his eyes. "Then we are finished."

"Perhaps not," Yvonne said. She was looking at the pack. "He built the lid himself? Then the lid has seen his hands. Hundreds of times. You go back to a moment just before he presses it down. For one second his fingertips are two centimetres away, facing the lid, and the lid sees them better than anybody ever did. And I photograph them."

"A fingerprint, from a picture made of light?"

"Painters leave fingerprints in wet paint. We photograph them very close under strong light, and compare them. For that we have a very good camera, chéri." She smiled at Dennis for the first time that afternoon. "Your foundation paid for it."

"In my business everybody knows this story," Dennis said. "A German hacker copied a minister's thumbprint from photographs taken at a press conference, and made a false thumb from it."

"And your promise to Jeff?" Yvonne said.

Jay looked at the sleeping man.

“Getting his fingerprint isn’t pressing it,” he said. “It’s my decision. We get the fingerprint. The button waits.”

“He will not see it like that,” Yvonne said.

“No.”

Scene 57

At eleven that night the lid of the Temporal Viewer lay on the hotel table, and its four small screws sat beside it in a coffee saucer.

The camera from the Centre hung round Yvonne's neck: a heavy black body with a short, fat lens. Dennis's men were in the grey car outside.

The beam touched the lid, and Jay wound back. The pack. The plane. His lab bench. Years of the dark inside a cupboard, broken by his own hands lifting the box out. Smaller hands: his at fifteen, his father's beside them. The long white lights of a thrift store. A garage, and a younger man taping a cardboard box shut.

Then a different light.

A workshop. A tube light, a board of tools, an old radio on a shelf. A man leaned over the box with a small screwdriver. A thin moustache, glasses as thick as a thumb, black hair going grey at the sides. A cigarette burned in an ashtray, and the smoke went straight up.

"That is him," Yvonne said. "Find me a moment when his hand comes down on the lid."

Jay ran it forward slowly. The man's hand came down towards the lid, fingers spread, to press it into place.

"Stop!"

"We have to go in," Yvonne said. "Dennis, stay where you are."

She took Jay's hand, and Jay pressed 3D.

They were standing on the lid, eleven centimetres tall, and above them, filling the sky, was the man's hand. Each fingertip was as big as a dinner plate. The skin was covered in ridges, curving lines that ran round and round in loops, as clear as the lines on Yvonne's own palm. Smoke hung frozen behind it.

"Don't walk," Jay said. "The bed is still here."

"I know, chéri." She turned from the waist and began to shoot. "Closer. A little." Jay moved the wheel a fraction. She shot again. The thumb came into view, and she knelt to catch it.

As the man leaned further over the box, a white card clipped to his shirt pocket swung into the sky above them. Yvonne turned the lens up at it for a moment, shot twice, and went back to the fingers.

"I have them all."

The hotel room came back. Dennis stood exactly where they had left him, one hand flat on his chest. "From here you were your normal size. But the hand. The hand was as big as this room."

Yvonne was scrolling through the pictures. "Oh, chéri. We have much more than prints." She turned the camera round. "He came to his workshop straight from work. He forgot to take his badge off."

The white card filled the little screen. A photograph of the same face, younger, and under it:

NATOSHI SAKAMOTO

Opto-Electronics

Xerox Palo Alto Research Center

"Now we know his name," Yvonne said.

Scene 58

Nearly thirty years before Jay unscrewed that lid, Natoshi Sakamoto stood at the edge of a hole in the ground in the mountains of Alpine County, California, and lit a cigarette.

Alpine County had fewer people than any other county in California, and the darkest skies he knew. He drove up from Palo Alto with his telescope two or three times a year. This time he had walked too far, past the last houses and into the trees, with a metal detector over his shoulder.

The hole was almost round, about eight metres across and two deep, like a bowl pressed into the hillside. A hiker would have called it a sinkhole.

A crater, he thought. Something hit here a long time ago.

It took him two days to clear the bottom. On the second evening the detector screamed. Most meteorites contain iron, and a detector finds them like any other buried metal.

The first piece came out curved, like part of a broken bowl. The outside was black and melted. The inside was smooth, polished metal. Then another piece, and another. All of them curved.

Rock doesn't come polished, he thought. This thing was hollow.

Near midnight the shovel hit something heavier: a lump of dark metal, and in the top of it, half buried, something round. He cleared the earth away with his fingers.

A sphere, set into the metal as if the metal had melted around it. Black, like velvet. He shone the torch on it. The light went in and did not come back. Natoshi had spent his working life at Xerox PARC measuring how materials send light back. Even the blackest paint in his laboratory sent back a little.

Somebody made this, he thought.

It was dark when he got home. Laura was at the kitchen table with Greg, who was sixteen and had his mother's eyes.

"You look tired and hungry, Nat. Come and sit with us."

"I have something very important to do."

Greg did not look up from his plate. "Don't bother, Mom. Anything is more important to Dad than us."

Natoshi stopped with his hand on the garage door. Behind him he heard Laura sit down again, and a fork touch a plate. Then he opened the door and went in.

He set the lump of metal under the lamp. Above the bench a small photograph was pinned to the wall: a young man in a cap in front of a long wooden hut, with a paper tag hanging from a button of his coat. His father, Hiroku, at twenty-four.

When Japan bombed Pearl Harbor, about a hundred and twenty thousand people of Japanese descent on the West Coast were sent to camps, most of them American citizens. Each family got a number, written on paper tags tied to every coat and every suitcase. The Sakamotos sold their farm for almost nothing. Natoshi's grandfather died in the camp in the second winter. His father came out with a suitcase and nothing else, opened a grocery store and worked in it fourteen hours a day, and every spare dollar went into a jar for his son's education.

The jar paid for a doctorate at MIT, and Xerox PARC gave Natoshi a job. At PARC he was the quiet one at the end of the table. Twice, another man's name went first on a paper about his work. He never complained. His father had never complained either.

This time, he thought, the whole world will know my name.

The lamp shone straight down on the sphere. None of the light came back.

Scene 59

Three weeks later, on a weekend when Laura and Greg were at his mother-in-law's, Natoshi fitted the curved pieces together on a sheet on the bench, like a broken pot. By midnight he could see the shape: an egg about as long as his forearm, melted outside, polished inside, heavier at the narrow end, where the sphere had sat.

Packing, he thought. *Somebody packed it.*

He drilled a little grey dust out of one piece with a carbide bit and ran it through a machine at work after everyone had gone home.

Titanium, mixed with metals in amounts he had never seen in any alloy. Iron meteorites are made of iron and nickel. Nobody had ever found a meteorite made of titanium. Titanium is what people use to build spacecraft.

It's not a meteorite, he thought. *It's a container. Somebody sent the ball here in a box.*

The sphere would not tell him anything. It did not get warm under a lamp or cold in the freezer. *Every object trades heat with the room*, he thought. *This one doesn't.* So he did what he knew best. He shone light at it.

He cut two round holes in an old metal box and set the sphere between them. Every night he aimed a laser through the first hole and turned the power up a little. Infrared first. Nothing. Then visible light. Nothing. Then ultraviolet.

At three and a half watts, a beam as thin as a thread came out of the other hole, every colour at once, and touched the old radio on the shelf. Above the radio a picture opened in the air: the garage, seen from the shelf, with a man in thick glasses bent over the laser, perfectly still.

Him. A moment ago.

He turned the laser off. The beam stayed. *Everything needs power*, he thought. *Where is it coming from?*

It took him six weeks to find the way to stop it. Infrared, at the same three and a half watts, the light that had done nothing at the start.

He spent the next ten years in the garage.

He learned that the picture came from the thing the beam touched, and that it was a recording: everything that thing had ever seen and heard. He learned to run it with pulses of light. Then he found that the sphere could make more than pictures. With the right pulses it made shapes that floated in the air. Most of them were strange to him: maps of stars he could not find, molecules no chemist had ever drawn. But some of the shapes could feel a hand come near.

It's a toolbox, he thought. They left us a toolbox.

Out of those shapes he built the controls: two wheels of light that bounced to catch your eye and held on to your hand. The sphere had no letters, so he built an alphabet of light, one letter at a time, over most of a year. When the first word floated above the bench, he laughed out loud in the empty garage.

Then he built the box around it all, by hand, with the lid held down by four screws.

In those years the house went quiet around him.

"What are you doing out there, Nat? At three in the morning?"

"It's for work. It's secret."

After a while Laura stopped asking. Greg stopped before she did. The neighbours called Natoshi the lunatic in the garage, and Greg heard it at school.

One spring morning Laura's suitcases were in the hall. She stood in the kitchen doorway and waited for him to say something. He said he was sorry. She waited a little longer, and then she went.

Two years later Greg hugged him quickly, with one arm, and drove off to college without looking back.

The ashtray was always full now. He coughed when he climbed the stairs.

On the bench the controls floated above the finished box.

Anybody could use this, he thought. Anybody at all.

His father had spent the war behind barbed wire because the government was afraid of him. Natoshi knew what governments did to people they were afraid of.

He built a lock.

At the edge of the controls he put a small button of light, and behind it he put everything he knew: the plans of the machine, the notes of ten years, and something else he had found in the sphere, which frightened him more than all the rest.

The lock asked for his fingertip on a small square of light. Then his eye: he took off his glasses and held his face close while a thin line of light passed across it.

Then, letter by letter, in the alphabet he had built, he wrote what anyone else would see.

WARNING: EXTREME DANGER. PROVIDE BIOMETRIC INFORMATION.

The red letters hung in the air above the bench. The house behind him was dark.

Scene 58

At two on Saturday afternoon a small pale cap of rubber lay in a plastic pill cup on Hill's blanket. It was the size of the tip of a finger, and its underside was covered in fine curving ridges.

Hill held it up to the window. "Whose is this?"

"Natoshi Sakamoto's," Jay said. "The man who built the box." He told him all of it: the lid, the hand coming down, the badge.

"You did this while I was asleep."

"I decided it here, in that chair."

"I turned the photographs into a mould," Yvonne said. "Dennis's engineers printed it this morning, and I filled it with fabric glue. American researchers made false fingers with it. They fooled most of the phones they tried."

"So now you want to press it," Hill said.

"At the diner you said somebody decided who is allowed to press it, and until we know who, I don't," Jay said. "Now we know who. I'm asking you to let me off the promise."

"A name isn't a reason, son. You know who locked it. You don't know why."

"The only way to find out why is to open it. If what's behind it hurts people, I stop. I read what it says, and I touch nothing else."

Hill looked at the ceiling for a long time.

"It's your machine. It always was. I asked for that promise so you'd stop and think."

"I've thought."

"Then you're off it. But you do it here, where I can see it."

Yvonne lowered the blind. Dennis put his back against the door. Jay aimed the beam at the water jug, and the controls opened above the bed with the small button of light at their edge: DANGER.

WARNING: EXTREME DANGER. PROVIDE BIOMETRIC INFORMATION.

Jay pushed the rubber cap over his own fingertip like a thimble and pressed it into the little square.

The square turned green.

STAGE ONE VERIFIED.

Yvonne took Jay's face in both hands and kissed him on both cheeks. Jay forgot the wheels for a second.

Then more letters came up.

PROVIDE STAGE TWO: RETINAL SCAN.

Beside the square, a circle of light opened, the size of an eye.

"What the hell," Jay said.

"Then we find his eye with the machine," Dennis said.

"No, chéri. The retina is at the back of the eye. You only see it through the pupil, with a strong light shone straight in. Nothing on his bench ever saw that."

"With glasses like his, the eye doctor looks at the back of your eye every year," Hill said.

"Very short-sighted eyes can tear inside. Sometimes the doctor photographs it."

"He died years ago," Yvonne said. "But PARC has his file, and his doctors, for the insurance."

"No doctor will give it to us," Jay said. "A dead man's medical records stay private."

"Liz is FBI," Yvonne said.

"Liz is on vacation. If she opens a case, the FBI knows about this machine by Monday." Hill looked at Jay. "Your call."

Jay switched to infrared, and the red letters went out. "Then I ask her what she can do without opening one. She can say no."

Scene 5!

Liz walked them out of the hospital doors and along the path between two strips of grass. Every step sent a dull beat through her nose.

Jay told her: the button, the false finger, the circle that wanted an eye.

"Without a case I can do nothing," Liz said. "My badge is in a drawer in California. If I call an eye doctor and ask for a dead man's file, he hangs up. He should." She stopped and turned. "But there is already a case. Two Americans were grabbed off a street, tied to chairs and used to make a third man do something. That's hostage-taking. It's a federal crime in my country even when it happens in Paris. I can't run it. I was one of the hostages. Somebody else gets it, and the first thing he asks is what the kidnappers wanted." She looked at the grey backpack. "And then he wants that."

"No governments," Jay said. "That was the whole point."

"The governments are already in it, Jay. You just didn't invite them." She held up her wrists. Red marks from the plastic ties ran round both of them. "The man who did this tied us up like a soldier and carried an army pistol. Somebody trained him, and somebody is paying him."

"So you want to hand it to the Pentagon. And then they use it to spy on everybody. Every room with a chair in it."

"A man nearly died for that bag."

"I know who nearly died. I sat by his bed for three days."

Two nurses on a smoking break by the door looked over. Liz waited until they looked away.

"The people you want to give it to," Jay said, "dropped two atomic bombs."

"To save millions more."

"You don't know that."

"Neither do you."

Yvonne stepped between them and put a hand flat on each of their arms. "Stop. We go round and round, and we are only three. Jefferson is upstairs. You say it all again, in front of him."

Scene 62

There were five of them in Hill's room and only two chairs. Liz said it all again. Jay said it all again. When they had both finished, nobody spoke.

"Don't vote," Hill said. "This isn't a committee. Everybody says what he thinks, once. Then Jay decides." He pushed himself higher on the pillows. "On Tuesday I told Liz this belongs to science. I still think it does. Then I got shot." He touched the dressing under his gown. "It's a race to own it now, and the other runners carry guns. I agree with Liz."

"Jeff," Jay said. His voice cracked. "After everything?"

"Because of everything."

"Amateur night is over," Liz said. "You've all been brave. You've also been lucky. Lucky runs out. Better us than them."

"A council of scientists from every country," Dennis said. "Nobody owns it, so nobody can use it against anybody. Who can promise us your country will not use it for war?"

"Who can promise us the others won't use it against us?" Liz said.

Yvonne looked out at the grey roofs before she answered.

"I'm sorry, chéri. I am with Jefferson and Liz." She spoke slowly. "One night, men with rifles killed a hundred and thirty people here. In cafés. At a concert. Since then we have soldiers in our streets and in our train and metro stations every day." She held up her bandaged hand. "This week a man cut my finger to open a door. This is not science any more. It is soldiers. We are not soldiers."

They were all looking at Jay.

"I wanted the Council," Jay said. "I still want it. But I've been lucky three times this week, and Jeff paid for one of them." He turned to Liz. "Call your boss. One condition. The machine stays on my back. Nobody takes it anywhere, nobody opens it, until I've seen what's behind that lock. If your people want it, they talk to me first."

"That's fair," Liz said. "They won't like it."

Dennis stood up with the box of cakes in both hands. "I think you are wrong, Jay. Governments are the reason I ride a bicycle with an armoured car behind it." He put the box on Hill's table. "But it is your decision. When you need money, or lawyers, or a door that locks, you call me. Not before. I do not want to be in the way."

"We owe you our lives, Dennis," Hill said. "Every one of us in this room."

Yvonne kissed him on both cheeks. "Merci, chéri." (Thank you, darling.)

Same kiss as mine, Jay thought, and was ashamed of himself for the second time that week.

Scene 63

At six on Saturday evening Kushnir stood to attention in his own empty office with the desk phone pressed to his ear. In the institute he barked at everyone below him. He did not bark at generals.

That morning he had shown the two videos to four generals in a room with no windows. The first general laughed out loud. Then the major explained how the light from the picture fell on the real benches, and nobody laughed again.

"Eight men go to Paris," the general said. "Special forces. They travel as embassy staff, with diplomatic passports. The French police cannot arrest a diplomat, and nobody may open an embassy's bags at a border. Almost every country in the world signed that agreement. They help Belenko find the machine. They learn how to work it and how to build another. Then they bring it home. And nobody outside must ever know."

"Comrade General, Belenko is a deserter. A traitor."

He did not mention the crates for the rebels in Gambalia. He had signed for them himself.

"We will deal with him when the time is right. For now he knows where the machine is, and we do not."

Kushnir took the old phone out of the drawer.

"Belenko. Men arrive at our embassy in two days. Where do they keep the machine? Who guards them?"

"First we negotiate. One million euros in cash to lead you to the machine and the lab rats who can work it. Another million when you have it."

The pen in Kushnir's hand bent. He laid it on the desk and counted to five. "I must ask permission. Until then you do not go near anybody."

He hung up and looked at the pad beside the phone, at the word he had written while Belenko talked, underlined twice: AMERICAN.

When the machine is ours, I will pay you myself, Belenko, he thought. And it will not be money.

On Sunday afternoon one more visitor sat on the surgery floor at Beaujon: a big man in a wool cap, with cheap black gloves over two bandaged hands and a bunch of supermarket flowers in his lap.

Halfway down the corridor a man in a dark jacket sat on a chair beside a door. *So the old man is in there*, Maksym thought.

The lift opened. The American came out with the grey backpack on his shoulders, the French woman beside him, and the woman from the bar with her nose still dark. They went into the guarded room without a glance at him.

Ten metres, he thought. The machine is ten metres away.

One guard with a vest under his jacket. A nurse at the desk. Children, an old woman with a stick. A kitchen knife in his coat, and two bad hands. And Kushnir on the phone: *You do not go near anybody.*

A nurse came out from behind the desk, pointed at the flowers and said something in French. Many French hospitals do not allow flowers on a surgery ward, because the water in the vase grows germs. Maksym did not know that. He only saw that she was looking at his face.

He left the flowers on the chair and took the stairs.

At nine on Monday night a long black car with diplomatic plates picked him up behind the station and drove down a ramp into the garage under the embassy of Krakughystan.

Kushnir sat behind a table in a room with no windows, smaller and greyer than Maksym remembered. Beside the table stood a metal suitcase.

"You look well, Maksym. Life must be good in America."

"You haven't changed, Anatoliy." Maksym sat down without being asked. "The money."

A young man in a suit lifted the suitcase onto the table and opened it. Bundles of euros, in paper bands. Maksym reached out, and the young man shut the lid on his fingers, not hard, and kept his hand on it.

"First you take us to the machine," Kushnir said, "and to the people who can work it."

"They visit the old one in a hospital in Clichy. Beaujon. Yesterday I watched them all go into his room. The American had the machine on his back. They still drive the mud-coloured Land Rover that hit my car. One headlight is broken." Maksym looked at the suitcase. "I have the number."

Kushnir slid a thick black phone with a short aerial across the table. "A satellite phone. It goes through no French network. My number is the only one in it. When you see them with the machine, you call. Until then, there is no money." He slid a second thing after it: a Makarov pistol, old and oiled. "And you have lost yours, I hear. In a bar. To your own bullet." He did not smile. "Try not to lose this one."

Maksym put the phone and the pistol in his coat. He was halfway down the stairs when he heard glass break in the room behind him.

Scene 64

At seven in the evening Liz sat in her hotel room in front of her laptop, pulled her sleeves down over the marks on her wrists, and pressed call.

Andrew Taylor, her supervisor, answered from home, in a golf shirt, with a heavy glass ashtray beside his keyboard and half a cigar in it.

"Ortega. It's Saturday. What happened to your face?"

"I was taken hostage on Tuesday night, Sir. In Paris."

"You're in Paris. You left the country and didn't report it. Everybody with a clearance reports foreign travel. Vacation too."

"I know, Sir."

She told him. A friend's father, a professor. A young engineer from California with a machine he had found. A back room in a bar, chairs, a bullet in the professor's stomach.

"What did they want? Money?"

"The machine. You point it at a thing, and it shows you what that thing saw and heard. As far back as the thing goes."

Taylor picked up the ashtray. "This?"

"That too."

"Ashtrays are not video cameras, Agent."

"I saw a man watch his own father push his mother into a kitchen counter thirty years ago, Sir. Out of a locket." She let her sleeves fall. "Whoever has this machine doesn't need a spy. He needs a pen from a desk in Washington."

Taylor looked at the ashtray and did not touch it again.

"I want a hostage case opened, Sir. And the engineer has conditions. The machine stays on his back, nobody opens it, our people talk to him first. In France we can't take a paper clip off anybody without the French."

"I'm sending Horatio Davenport. He takes charge. Two days."

"I know him, Sir. He trained me. Give him an object only the Bureau knows the story of. The engineer reads it in front of him."

"This had better produce results, Ortega. Your career is at stake."

At two on Monday, at the American embassy, Liz smelled the cigar before she saw it.

Horatio Davenport stood in the doorway of a small office with no window. His hair was cut so short it was only grey shadow, and his rolled sleeves showed forearms like pork chops. An unlit cigar sat in one corner of his mouth. The FBI had no military ranks, but he had left the army a sergeant, and at the Academy everybody had still called him Sergeant.

"I thought this was a smoke-free building, Sir."

"It is. It isn't lit." He pulled her into a hug like a silverback gorilla's. Then he held her away from him and looked at her nose and the marks on her wrists. "You should know better, Ortega. I trained you. So. What's this mumbo-jumbo time-machine crap?"

"It's not a time machine, Sir. It's more like a recorder."

"Who got you out?"

"The engineer. He walked into that bar alone with the bag on his back, and he got us out without firing a shot." She hesitated. "Then the man shot the professor. And the bullet came back and hit him."

Davenport took the cigar out of his mouth. "Came back."

"I was there, Sir. I still don't understand it."

He looked at her for a long time, and put the cigar back.

"Did Washington give you an object, Sir?"

"Yes."

"What is it?"

"Classified." He put the cigar back. "Set it up, Ortega. Tomorrow."

Scene 65

The strongroom under the Louvre took both keys and six numbers. It swung open on steel shelves, wooden crates with foreign labels, and a Roman helmet in a padded case.

"Two floors under the ground, stone all round," Jay said. "If we do this at the hospital, the picture goes through the walls and the nurses see it."

At the street door the guard had pointed at Davenport's cigar and said, "Non." (No.) Davenport had said, "It isn't lit." The guard had said "Non" again, and the cigar had gone into Davenport's shirt pocket. He had not spoken since.

Dennis had asked to come. "I paid for half the instruments in this building," he had said. "Let me see your FBI man believe it."

He bent over the hand-made black box in its padded bay. "My nephew builds better gadgets than this."

"When you see what it does, you'll have more respect for it, Sir. Did you bring the object?"

Davenport took a small plastic bag from his jacket. Inside was a single army dog tag on a short chain. A strip of black tape covered the name.

"Who was the soldier?"

"Classified."

"Not for long," Jay said quietly.

The picture opened above the crate: the strongroom ceiling, the lamp, Jay's chin. Jay spread it to the width of his arms.

Davenport's mouth opened. "I'll be damned." He leaned close and said a date into Jay's ear, so quietly that nobody else heard it.

The picture went dark, and the sound came first: engines, men shouting, the hiss of radios. Then gunfire. The dark swung hard, and there was light: green leaves, white sky, a red dirt road turning over. The tag had fallen out of a soldier's shirt when he hit the ground, and now it lay on his chest and looked straight up.

"Better from inside," Jay said. "Hold on. Don't walk."

Davenport took his hand, and the jungle swallowed the strongroom. Jay and Davenport stood on a red dirt road under trees as high as towers. Outside the globe Yvonne, Dennis and Liz saw two men standing in a jungle that filled the room. Liz had her phone up, filming.

Davenport dropped into a crouch, his free hand reaching for a pistol he was not wearing.

"It's a picture," Jay said. "It can't touch you."

"KEEP GOING!"

The whole world rose and fell with the soldier's breathing, then rocked as he struggled. Jay wound forward until Davenport shouted "STOP!"

Frozen above them stood a man in a torn green shirt with a knife raised in both hands, the point coming down at the tag.

"Slowly."

The knife came down. It was a hand's width from the soldier's chest when the man's head burst. The body folded sideways and was gone.

A young soldier ran into view with a rifle and a cigar in the corner of his mouth, and dropped to his knees beside them.

"Are you okay, Sir?"

A man's voice came from close beside the tag, short of breath. "That was close, Davenport. Thank you. You saved my life."

The old Davenport did not move. His jaw was working.

"Enough," he said. "That's enough."

The strongroom came back. Davenport looked for a chair, found none, and sat down slowly on a crate from Florence.

"If I hadn't seen it, I would never have believed it," he said at last. He took out his phone, looked at the screen and stood up. "No signal down here."

He went up the stairs two at a time. His voice came down the stairwell. "Yes. All of it. Tonight. To the Director, nobody else."

"Who was the soldier he saved?" Jay asked.

"The Director of the FBI was an army officer before he joined the Bureau," Liz said. "In Gambalia. It's in his life story on the Bureau's website."

Davenport came back down the stairs ten minutes later, slower than he had gone up.

"The Director watched it on Agent Ortega's phone," he said. "Twice. He says it happened exactly like that. He was there." He put the cold cigar back in his mouth. "He wants it home, Davies. And you with it. Alive."

"I heard the last part," Jay said. "It's the first part I'm worried about."

Scene 66

"No judge will sign for it," Liz said in the corridor of the hospital, with her phone still in her hand. "Davenport asked. A warrant is for evidence of a crime, and a dead man's eye isn't evidence of anything. And in California an eye doctor only has to keep a file seven years."

Jay nodded slowly, as if he had expected it.

"He worked with strong lasers," he said. "At Xerox PARC. Anybody who does has his eyes photographed before he starts, so that if a laser burns the retina later, everybody knows it wasn't burned before. And there's a federal law. If your job can hurt you, your employer keeps your medical file for thirty years after you leave."

"And the FBI can't get that file either, Jay. Not without a reason."

"I know." He looked at the floor. "I'm not going to ask you anything else, Liz."

She looked at him for a long moment, and went back into Hill's room, and shut the door.

In California it was ten past three in the morning, and Rashid Lamrani answered on the second ring, as if he had been sitting by the phone. He had.

"Doctor. Is everybody alive?"

"Everybody's alive. Jeff was shot. He'll live." Jay told him the rest in two minutes: the strongroom, the Land Rover, the bar, the watch, the bullet that came back. A dead man's fingertip, made of glue. And a circle of light that wanted an eye.

Rashid did not say anything for a while.

"His name was Natoshi Sakamoto," Jay said. "Opto-electronics, Xerox PARC. If they kept his file, there's a photograph of the back of his eye in it."

"Old company archives are kept by little firms that store paper and scans for big companies," Rashid said slowly, the way he talked when he was already doing it in his head. "The law makes them keep it for thirty years. It doesn't make them protect it well." A pause. "Doctor. You know what you are asking me."

"I know. You can say no. I'll understand."

"I'm not going to say no. I'm going to say it is a crime in California and a crime in France, and that I will do it anyway, because you would not ask me if there was another way." Keys clicked. "And there is something else I want to bring. I have been thinking about it since you told me about the diamond."

"What?"

"A way for you to turn the machine off from anywhere. From your phone. A lock. So that if anybody ever takes it from you, it is a box of junk until you say otherwise." Another pause. "And one more thing. Not yet. I need to see your face to explain it."

"The FBI will pay your ticket. Davenport says so."

"Then tell Mr Davenport thank you, and that I will not tell him anything I do." Rashid almost laughed. "I took twenty-two days of vacation tonight. Amanda will have the email when she wakes up."

"Rashid."

"Yes, Doctor."

"Thank you."

"Don't thank me yet. Thank me when we know what is behind that lock."

At eleven on Thursday morning Rashid came through the doors at Charles de Gaulle with one bag on his shoulder and a laptop case in his hand. He had not slept on the plane.

In the laptop, in a folder with no name, was a photograph from an old company archive in Palo Alto: the back of a man's eye. A dark red circle, with pale lines branching across it like the roots of a tree.

Scene 67

At ten that night the corridor of the surgery floor was dim and quiet, and Dennis's guard sat on his chair outside Hill's door with his arms folded, asleep with his eyes open.

Liz stood up when Jay came out of the room.

"You want me outside."

"I'm sorry."

"Don't be. If I don't see it, I don't have to write it down." She sat down again beside the guard. "Knock if you need me. Knock twice if you need the FBI."

Inside, Yvonne had lowered the blind. Hill was sitting up against three pillows with the drip in his arm. Rashid had laid two things on the tray table: a fingertip of clear silicone in a pill cup, and the photograph of an eye, printed on glossy paper the size of a playing card.

Jay put the pack on the end of the bed and aimed the beam at the water jug. The controls opened in the air above the blanket, the two wheels bouncing gently, and at their edge the small button of light.

DANGER.

"Last chance, son," Hill said quietly.

"I've had a lot of last chances." Jay touched it.

WARNING: EXTREME DANGER. PROVIDE BIOMETRIC INFORMATION.

He pressed the silicone tip against the square. Green.

PROVIDE STAGE TWO: RETINAL SCAN.

A circle of light opened, the size of an eye. Rashid held the photograph up in front of it. Red. TRY AGAIN. He tilted it out of the reflection of the reading lamp and held his breath and held it still. A thin line of light crossed it, slowly, from top to bottom.

Green.

For a moment nothing happened. Then two buttons opened in the air side by side. One glowed on its own with two words: TEMPORAL ENTANGLEMENT. The other was plain and grey.

DOCUMENTATION.

Jay pressed the grey one.

Pages opened above Hill's bed in small, neat capital letters, written in the alphabet of light that Jay had read every night for two weeks. Drawings of the controls. Rows of ones and zeros. Every command the sphere understood, with a note beside each one. And at the top of a page in the middle, underlined twice:

GALACTIC ENCYCLOPEDIA.

"That's my word," Jay said. His voice was strange. "That's the word I used. Encyclopedia."

"Then he saw what you saw," Hill said. "Before you."

The pages went on. The dictionary, the dots and the atoms, exactly as Jay had found them, in the same order. Hundreds of photographs of shapes, each with a note under it, and under almost every note a question mark. A page about the beings under two suns, with NOT SURE written beside it. A page about a mirror: MORE THAN THREE MILLION YEARS OF DARK. STILL GOING. STOPPED.

"He turned it on itself," Rashid whispered. "He tried to see who made it."

"And got three million years of the inside of a box," Jay said.

A page that was only a list of numbers. CODES NEVER TRIED. More than four hundred of them.

And then the rules of the black beam.

They read them in silence. What it did. How the past became solid. Why it had to be played at half speed. A line about Newton, and a sum: *Half speed: four times heavier. One tenth: a hundred times heavier.* And at the bottom, underlined twice:

ONLY THOSE INSIDE WILL REMEMBER BOTH VERSIONS. THINK BEFORE YOU PRESS THIS.

Yvonne sat down on the edge of the bed.

"Both versions of what?" she said.

Nobody answered.

Jay looked at the two words glowing on their own in the air. Then at the laminated menu card on Hill's tray table: *Dinner. Choose one.*

He picked it up and tore it in half, and in half again, and put the four pieces on the tray.

"Jay," Hill said.

"A card," Jay said. "Two minutes. Nothing alive. I promise." He pressed TEMPORAL ENTANGLEMENT.

A low hum filled the room. The hair stood up on every arm in it. The reading lamp and the jug bent and swelled, as if they were seeing them through a glass ball. Then a beam came out of the sphere with no colour at all.

It was black.

Jay aimed it at the tray table, wound back two minutes, and pressed 3D.

Black folded round him, soft and silent. He was standing in Hill's room, at his own size. Not a giant room. His own. And in front of him stood a second Jay, frozen, holding a whole menu card in both hands, about to tear it. Behind him Hill was frozen with his mouth open on the first sound of a word. Yvonne was frozen with one hand half raised.

There was no sound at all.

He reached out and took the edge of the card. It would not move. He might as well have pulled at a wall.

Nothing moves when time is stopped, he thought, and turned the wheel to half speed.

The frozen people began to move, slowly, as if through water. The other Jay's hands began to tighten on the card. Jay took the card by its corners and pulled. It came, slowly, fighting him like a thing stuck in mud, and every centimetre cost him, and his arms shook. He drew it out of his own hands and laid it on the tray, whole.

He touched the air where QUIT 3D should be. The black opened and fell away.

The menu card lay whole on the tray table. The four torn pieces were gone.

And he remembered.

He remembered tearing it. And he remembered sitting with the card in his hands, about to tear it, and the card sliding out of his fingers by itself, slowly, and settling on the tray.

Two memories. Both true.

"Jay," Yvonne said. Her voice was very small. "The card. It just pulled itself out of your hands. I saw it."

"It did," Hill said. He was staring at the tray. "It slid out of your fingers and lay down. Like a ghost took it."

"I took it," Jay said. "I went back two minutes and took it. Before I tore it."

"You never tore it," Yvonne said. "I was watching you. You picked it up, and it flew out of your hands."

"In your version." Jay sat down on the floor of the hospital room with his back against the wall. "In mine, I tore it in four pieces and put them right there. I remember both. You only remember one."

Rashid had not moved. He was holding the edge of the bed with both hands.

"Only those inside remember both versions," he said. "It is not a viewer. It never was. It changes the past."

Nobody said anything for a long time. Somewhere down the corridor a trolley rattled past.

"I want everybody in this room to hear me," Hill said at last. He was grey, and he was holding his stomach with one hand, and his voice was the voice he had used on a football

field. "Nobody uses that on a human being. Nobody uses that to fix anything they don't like. Nobody uses it alone. Not you, son. Not anybody."

"Jeff —"

"Promise me again."

Jay looked up at him from the floor.

"I'll promise you something better," he said. He got up and went to the pack. "Rashid. Can we change the key?"

Rashid read the last line on the page about the lock. "*To change the key, give the old key, then the new one.*" He looked up. "Yes."

"Then we change it. Not to my finger and my eye. To yours and mine. Both. Together." Jay held out his right hand, palm up. "Nobody alone. Not you. Not me."

Rashid looked at the hand for a moment. Then he put the silicone tip on the square, and held the photograph to the circle, one last time. PROVIDE NEW BIOMETRIC INFORMATION. He pressed his own forefinger to the square and held his own eye to the line of light. Then Jay did the same.

KEY CHANGED.

"Now try it alone," Jay said.

Rashid did. The two words did not come. The square only blinked, waiting.

"Good," Hill said, and closed his eyes, and for the first time that day the lines in his face let go a little.

Behind the last page there was one more. It had no title. It was a letter.

Jay read it aloud, slowly, standing at the foot of the bed.

I am privileged. I have found the first proof that we are not alone in the universe. It came to us from the sky, packed inside a metal shell.

It is an encyclopedia from a people who were dying, and they sent it with a dictionary, so that anybody could learn to read it.

I have given it many years of my life. It has cost me my work, my friends and my family. I do not ask anybody to forgive that.

First I learned that it can take the pictures and sounds out of any object. Then it began to show me things no human being has ever seen. Their chemistry, built from our own elements in ways no chemist has tried. Their biology, cell by cell, and the code of their own bodies. Their machines. Their history. I understand very little of it. It will take better scientists than me, from every country, many years to read it all.

Near the end I found something more, by accident. It can change the past. It is not a viewer. It is a Temporal Changer.

Used carelessly, by anybody, this could destroy us. That is why I have locked it. When my work is finished I will show it to the world. I want scientists from every country to study it, guard it and decide how it is used. Nobody alone. Not a government. Not a company. Not me.

First we should only look. Only when we understand everything it can do, and everything it can break, should anybody be allowed to change one thing.

One planet. Last chance.

Dr Natoshi Sakamoto, Palo Alto, California.

Jay folded the pages away in the air with one hand, and they went.

"When my work is finished," Yvonne said quietly. "He never finished."

"No," Jay said. "So we finish it for him."

Scene 68

The notebook lay open on the bench in Natoshi Sakamoto's garage. Every page was full of ones and zeros in rows, and almost every row was ticked off.

At the top of the first page, years ago, he had written the rule: UV pulse = 1. Infrared pulse = 0.

Each time a laser hit the sphere, the sphere listened for a moment. Into that moment he could fire short pulses of light, like Morse code: ultraviolet for one, infrared for zero. Every command was ten pulses long. Two choices, ten times over: 1,024 possible commands. A steady ultraviolet beam was nothing but ones: that switched the machine on. A steady infrared beam was nothing but zeros: that switched it off. In between lay every other combination. Night after night he had tried them, a few at a time, in order. Every one of them made the sphere show something, and almost none of it made sense to him.

He knew most of them by now the way a man knows the faces in his street: the maps of stars nobody had catalogued, the six-stranded ladders, the crystals that folded and unfolded, the mathematics with pi and the proton floating up out of it, and the tall thin people under two suns. He called it, in his notebooks, the Galactic Encyclopedia, and he was a little embarrassed by how much he liked the name.

It took him years to put the rest together, and he was never sure of it. The beings in the pictures had been dying. In the last pictures their two suns had swollen and turned red. Before the end they had packed everything they knew into spheres and sent them out in every direction: how to make their substances, how to build their machines, and the code of their own bodies, written atom by atom, so that somebody, somewhere, could build them again.

He asked himself why a people who could build such a thing had not simply left. The answer was the same for them as for us. Nothing travels faster than light, and the nearest world they could live on must have been too far away to reach before their suns killed them. A ship full of living people has to arrive while they are still alive. A sphere does not. It can fall through space for millions of years and still remember everything. So they made the spheres.

One night he asked himself why they had not simply sent a film. He answered it the same night. A film is a code too. Ours are strings of numbers that only our machines can turn back into pictures, made for our kind of eyes. They could not know what machines we would have, or what eyes, or whether we would have eyes at all. So they sent the dictionary first, built from what any mind that can make a laser must already know: counting, atoms, shapes in space. And for anybody who did have eyes, the sphere made its pictures itself, out of light, in the air.

There was one way to see them, he thought. Every object remembered everything since it was made, and the sphere was an object too.

He stood a small front-surface mirror on the bench, the kind used in laser laboratories. The silver lay on the front of the glass, not behind it, so the beam came back clean, with no

second, fainter copy. He bounced the beam off it, back onto the sphere itself. The picture showed the garage from inside the box. He wound back. Years of the garage. Then a torch, and his own hands, and his own face, younger, digging. Then the dark of the earth under the hill in Alpine County, for thousands of years. Then a crash, and before it a roar that went on and on, and a long shaking: the fall through the sky. Then dark again, and silence.

He wound back at full speed and kept going. The counter ran backwards faster than he could read it. Ten thousand years. A hundred thousand. A million. No light. No sound. Only the inside of the metal shell, with the sphere in it, falling.

At four in the morning he stopped. The counter said more than three million years, and it was still dark.

It has been travelling since before there were human beings, he thought. Whoever made it is at the far end of that dark.

He wrote it all down, every hour of it, and he never tried again.

Tonight's page had three new rows.

It was past two in the morning. The house behind him was dark and empty. He tapped out the first row. A ring of tiny blue points opened above the bench, turned slowly, and tied itself into a knot. He wrote it down without looking up.

The second.

A low hum filled the garage, like a big electrical transformer. The hair on his arms stood up. The sphere began to glow, and the air round it bent, so that the tools on the wall behind looked curved and swollen, as if he were seeing them through a glass ball.

Then a deep sound, falling lower and lower, and something shot out of the sphere.

A beam with no colour at all. It was black. It crossed the garage and touched the far wall, and above the bench the picture opened: the garage as the far wall had seen it a few seconds before, and himself frozen at the bench with his finger on the switch.

He did what he always did. He touched 3D.

The light did not burst outwards. Black came out of the sphere, soft and quiet, and folded round him, and closed.

He was standing in his garage. Not a giant garage, with him tiny inside it. His own garage, at his own size. The bench, the tools, the old radio. In front of him a man in a stained grey cardigan stood frozen with his finger on a switch.

Himself. A few seconds ago.

Behind him, where the far wall should have been, there was only black.

He walked across the floor. His footsteps sounded on the concrete. He reached out and touched the frozen man's sleeve. It was wool. It was real.

He took hold of the stool and pulled. It did not move a millimetre.

Time is stopped, he thought. Nothing moves when time is stopped.

He let the time wheel turn at half speed. The frozen man's finger came down on the switch, slowly. Natoshi pulled the stool again, and it moved, like dragging it through deep mud. Every centimetre cost him. He dragged it to the door.

The cup of coffee stood on the bench. He pushed it with one finger. It fell slowly, touched the concrete, cracked into pieces, and the coffee spread across the floor at half speed.

He touched the air where QUIT 3D should be. The black opened and fell away.

He was standing in the real garage, in the present.

The stool was by the door. The cup lay in pieces in a pool of cold coffee.

And he remembered.

He remembered standing at the bench a few seconds ago and watching the stool slide across the floor by itself, and the cup jump off the bench and break at his feet. And he remembered pulling the stool himself.

Two memories. Both true.

His knees gave way. He crawled to the bench and fired the infrared, and the black beam vanished.

"I moved the stool in the past," he said aloud. His voice shook. "And the stool moved here, now. Nobody can change the past. Every law of physics says so." He laughed once, without any joy. "But nothing in this ball has ever obeyed a law of physics."

Einstein had called it spooky action at a distance: two tiny particles so linked that when you touch one, the other changes, however far apart they are.

On a clean page Natoshi wrote: TEMPORAL ENTANGLEMENT.

"You link now to then," he told the sphere. "Touch then, and now changes."

The cigarette had burned down to the filter in the ashtray.

"I can change the past," he said quietly.

Scene 69

The pieces of the broken cup sat in a glass jar on the shelf next to the old radio. Natoshi had not been able to throw them away.

The next night he did it again. This time he walked into the black, set the time wheel to one tenth of normal speed, and took hold of the top button on his frozen self's collar. It would not move. He might as well have pulled at a stone. At half speed it fought him like a thing in mud, and he worked it through the hole a millimetre at a time.

When he came out, his own top button was open. And he remembered feeling fingers at his collar a few seconds ago, with nobody there.

The fingers were mine, he thought.

He wrote: *Half speed: four times heavier. One tenth: a hundred times heavier.* And under it: $F = m \times a$.

"Newton. Force is mass times acceleration," he said. "At half speed one of my seconds is half a second for the button. To move as far in half the time, it has to go twice as fast, and get up to that speed in half the time. Two times two. Slow it down ten times, and it fights you a hundred times harder. Stop it, and nothing in the world can move it."

Then he thought of the beings under the two red suns. They must have had this beam too. Why had they not gone back and saved themselves? He looked down at his notebook and had the answer. The black beam let a man move a stool, or a cup, or a button, and even those fought him like stones. Nobody could push a sun.

Then he said, "If it can undo a button, it can undo a wound."

He pushed a pin into the tip of his left forefinger. A drop of blood came up. He went back with the black beam to the moment the pin was a centimetre from the skin, and at half speed he took his past self's wrist in both hands and pulled the finger away from the point.

When he came out, there was no wound. No blood. And he remembered the pin going in, and he remembered something taking his wrist and pulling his hand away.

"Only I remember both," he said slowly. "Because I was inside. Anybody in there with me would remember too. Everybody else just lives the new version. They never know there was an old one."

He drew a line down the middle of a clean page.

On the left: *A man about to step into the road. Pull him back. A cancer while it is a few cells. Tell the patient now. An earthquake. Warn the town the day before.*

At the top of that side he wrote: THE TEMPORALS. Guardians nobody would ever see.

On the right: *Last week's lottery numbers. Which shares to buy, ten years ago. A crime nobody could ever see.*

The same machine would do all of it, for whoever had a finger on the controls.

“Nobody gets this,” he told the sphere. “Not without me.”

Behind the lock, after the finger and the eye, he added one more button. Two words that would glow on their own only when the lock was open: TEMPORAL ENTANGLEMENT.

“Whoever gets this far,” he said, “gets one last chance to stop and think. Before they change the world, or destroy it.”

Scene 7E

The notebooks burned one at a time in the barbecue behind the garage. Natoshi stood over them in the dark and watched the rows of ones and zeros curl and go black.

It had taken him nearly a year. Every code, every drawing, ten years of notes, was now inside the machine, behind the lock that only his finger and his eye would open. Paper could be stolen.

A little over six hundred codes had been tried. About four hundred never would be, not by him. He had decided that the night he moved the stool. The black beam was enough. Enough to change the world, and enough to destroy it. Enough to put his name in every history book. And every code he tested was another night in the garage, away from Laura and Greg. The rest could wait until the whole world was watching, with better scientists than him.

He went back inside and lit a cigarette and looked at the box.

"Where does your power come from?" he asked it. "Physicists say empty space is not empty. Even in a perfect vacuum there is energy, everywhere, all the time. They have measured it. Put two metal plates very close together in a vacuum, and they are pushed together by nothing at all. They call it the Casimir effect. But nobody has ever found a way to take any of that energy out." He tapped off the ash. "Unless you have."

He looked at the ball for a long time.

"Power for anything," he said. "Except to beat the light. They had all the power in the universe, and they still could not reach another star in time." He put the cigarette out. "I don't need to understand you. I only need to keep you safe."

He pulled the telephone across the bench and dialled Greg's number. The answering machine.

"Greg. It's Dad." He stopped. "I know what you're thinking. But it's finished. Come to the garage tomorrow at ten. Bring your mother, if she'll come. I want you to be the first to see it. Before anybody. And I want to say I'm sorry. Properly. To your faces." He held the phone a moment longer. "Ten o'clock. Please."

Then he opened the lock: his fingertip on the square, green; his glasses off, the thin line of light across his eye, green. The two words glowed on their own. TEMPORAL
ENTANGLEMENT.

He could go back. The spring morning when Laura left, with the suitcases in the hall. He could stand beside his younger self and take the cigarette out of his mouth, and send him back into the house, and make him sit down at the kitchen table.

His hand stayed where it was.

If I change it, he thought, only I will remember. They will never know I was sorry.

He switched the machine off.

In the morning he put on a clean white shirt and his only good jacket. At twenty to ten he was carrying two folding chairs across the garage when the pain came.

It hit the middle of his chest like a fist and ran down his left arm. He went down on his knees. Thirty years of cigarettes.

He crawled to the bench and pulled himself up onto the stool and switched the machine on. If he could reach the black beam, he could go back ten years and tell himself. See a doctor. Stop smoking. Now.

His fingertip on the square. It took three tries to hold it still. Green.

His glasses off. The line of light came for his eye, and the pain came again, harder, and his head jerked away. The light went red. TRY AGAIN.

He could not lift his head a second time.

He laid his head down on the bench beside the machine.

Greg stood at the garage door at ten past ten. His father's car was in the drive. Nobody answered his knock.

Sure, Greg thought. *Another lie*. He turned to go.

Over the garage door hung the old basketball hoop, the net long gone. His father had put it up the summer Greg turned nine, and played with him every evening until it was too dark to see. That was before the meteorite. Before the garage became the only room in the house.

Greg turned back and tried the side door.

His father was at the bench with his head down on his arms, as if he had fallen asleep there. Two folding chairs lay on the floor. Beside his father's head stood a metal box with a black ball in it.

After the funeral Greg sold the house and kept almost nothing. He kept the box, because it had been beside his father when he died. For a while he tried to make it work. It never did anything.

When he moved to another city, he gave it to a thrift store in Palo Alto with a bag of his father's old clothes. "It came out of a meteorite," he told the woman at the counter. "My father was an engineer at Xerox PARC. He said so." She gave him the look people give a man who is a little crazy.

She put the box on a shelf near the back, between a rice cooker and a box of cables, and stuck a price on it: \$4.99.

Scene 7!

On Friday morning Davenport came into Hill's room with a cold cigar and a face like a man carrying a message he did not like.

"The Director called at six," he said. "He wants it home. Today. A plane from Le Bourget at nine tonight. The machine, Dr Davies, Mr Lamrani. Dr Lefèvre too, if she wants. And the professor as soon as the doctors let him fly." He looked at Jay. "Tonight you sleep at our embassy. The French police can't come through an embassy's door without the ambassador's permission. Nor can anybody else."

"And at home?" Jay said. "Who opens the box at home?"

"People with clearances."

"People who will want the crystal," Jay said. "Before they want anything else."

Davenport did not answer that, which was an answer.

"I am not an American citizen," Yvonne said.

"No, ma'am. It's your decision. It's also your life. The man who cut your finger is still in Paris, and his friends came here with diplomatic passports."

She looked at Jay a long time, and nodded once.

When Davenport had gone to make his calls, Jay sat down on the end of Hill's bed. Rashid was on the windowsill with his laptop on his knees and the pack open beside him, and a new board no bigger than a stamp wired into the battery case.

"It works," Rashid said. "Look."

He opened the app on Jay's phone. A new grey button: LOCK. He pressed it. On the pack every small light went out, and the wheels did nothing. He pressed UNLOCK, and the lights came back one by one.

"From your phone, from anywhere in the world, you make it dead. And it stays dead until you wake it. I have the only other key, on mine." He closed the laptop. "But a lock is not enough, Doctor. A lock stops a thief. It doesn't stop a government. A government keeps the box and keeps you, and waits, and one day it asks you very nicely, in a room with no windows."

"You said you had to see my face to explain the other thing."

"Yes." Rashid took a yellow sticky note out of his shirt pocket, creased from a week in it, and stuck it on the bed rail. In his small square capitals it said: *IF THEY GRAB IT, EVERYBODY GETS IT.*

"I have computers in eleven countries," he said. "Nobody knows they are mine. They copy each other every hour. You can't switch them all off at once, not if you are a government, not if you are ten governments. We put something on them. If the machine is taken from

you, or if you disappear, or if you don't press a button on your phone once every twenty-four hours, they let it go. Everywhere. At once."

"Let what go?" Hill said.

"I thought the pictures," Rashid said. "Everything the machine can do, on every news site in the world."

Jay shook his head slowly.

"Pictures won't stop them. Pictures make them want it more." He was quiet for a moment. Then he looked up, and Hill saw something in his face he had never seen there before. "Not the pictures. The crystal."

"Jay," Hill said.

"Think about it, Jeff. Why does every government on Earth want this machine? Not for Lincoln. Not for a baby's first steps. For that diamond. Whoever has the warm quantum computer first opens everybody else's secrets and keeps his own. That's the whole race." He stood up. "So we take the race away. We write down the recipe for pattern 413. The temperature, the pressure, the timing, the silicon. Every step. And if anybody grabs the machine, the recipe goes out to every physics department, every university, every lab on Earth, at the same moment. By the next morning a thousand laboratories are growing it. Every country has it. Every country's codes are open to every other country. Their secrets die with their locks."

Rashid's mouth was open.

"Nobody can afford to steal it," Jay said. "Because the moment they steal it, they lose everything they're stealing it to protect. We don't threaten them with their secrets." He touched the pack. "We threaten them with ours."

For a long time nobody spoke. Down in the street an ambulance came in under the window with its siren off.

"That's blackmail," Hill said at last. "Of the whole human race."

"It's a promise," Jay said. "If nobody grabs it, nothing happens. Ever. And when the scientists from every country sit down together, we give them the recipe ourselves, all of them at once, and they decide what to do with it. That's what Natoshi wanted. Nobody alone."

Hill looked at him for a long time.

"Six weeks ago," he said, "you couldn't tell Amanda Gladwell your own number."

"Six weeks ago I didn't have anything worth protecting."

Hill closed his eyes. "Do it," he said. "And God help us if your little computers catch a cold."

"They don't catch colds, Doctor," Rashid said. He had already opened the laptop. "They have backups."

By two in the afternoon it was done. Twelve pages of plain words and numbers, typed by Jay from memory and checked against the sphere, sat encrypted on machines in eleven countries, waiting for a signal that must come from Jay's phone every twenty-four hours, or never come at all.

"Who else knows?" Yvonne asked.

"The four of us," Jay said. "And when it matters, everybody."

Rashid stayed behind with Hill and the laptop. He would fly with him when the doctors let him go.

At half past four the convoy came for them at the hospital gates.

Scene 72

On Friday afternoon a white van with no windows in the back stood across the road from the gates of Beaujon, between a bakery lorry and a row of scooters. Kushnir sat in the passenger seat with a newspaper he was not reading. Maksym sat behind him with the wool cap pulled low. Four men sat on the floor in the back with long bags across their knees.

"When they come out, we take Davies and the bag," Kushnir said. "Whoever is with them comes too."

Two black cars with green diplomatic plates turned in at the gates. Kushnir knew the plates. The American embassy. Four men in dark suits with wires in their ears got out, and a French police car pulled in behind them.

Kushnir folded the newspaper and called his own embassy. "Everyone. Now. With everything. Plain cars. No diplomatic plates."

The convoy came out of the hospital gates at half past four: a French police car in front, then two black embassy cars. The white van let a bus go by and pulled out behind them. Two plain grey cars fell in further back, four men in each.

"They are going to their embassy," Maksym said.

"If they get there, it is over." Kushnir watched the avenue. At the end of it stood the Arc de Triomphe. "There. Twelve avenues come into that square, and there are no lanes. Everybody stops, everybody pushes in. And afterwards every witness will say terrorists." He picked up the radio. "At the arch. Front car and back car. Nobody touches Davies. We need him alive."

Jay sat in the back of the first embassy car with the pack on his knees, Yvonne in the middle and Davenport by the other door.

Cars poured into the roundabout from every side. "In this square, the cars coming in have priority over the cars already going round," Yvonne said. "Parisians say only a fool drives here."

A grey car cut in front of them and stopped dead. Behind them metal crashed into metal. The doors of the grey car opened, and men in black masks got out with rifles.

"Down!" Davenport shoved Jay and Yvonne to the floor.

The windscreen turned white with cracks. The French officers were out of their car, firing from behind its doors. Jay pressed his face to the floor mat and held the pack against his chest. Yvonne's hand found his wrist and held on.

The firing stopped for a moment. Jay raised his head. The driver of the second embassy car lay over his wheel and did not move. One of the masked men lay on the cobbles. Another man came round the back of the grey car without a mask, in a wool cap, with a bandaged left hand.

"It's him," Jay said.

Davenport pushed his door open. He had one foot on the road when Maksym fired. Davenport spun and fell against the car with his hand on his shoulder. Blood came through his fingers.

"Take it and run!" He was on one knee, still between them and the gun. "Our embassy. Straight down the avenue!"

Yvonne dragged Jay out by the strap. They ran bent double between the stopped cars, past a taxi with its driver flat on the seat, past a woman holding a child against her and not moving.

"Which way is the embassy?"

"We are not going there. They know where you are going. They will be between us and it." She did not slow down. "Are you afraid of skeletons?"

Jay looked back once. Two men were running after them through the cars: the wool cap, and a small thin older man in a dark coat.

"They're behind us!"

"I know. I was born here. They were not."

Under the edge of the square, steps went down into the metro. Yvonne pressed her travel card to the reader at the glass gates, pushed Jay through in front of her and squeezed in behind him before the glass closed.

"Is that allowed?"

"No. Run."

A train stood at the platform with its doors open. Line 6. She pulled him into the last car, and the doors closed.

"Where are we going?"

"Denfert-Rochereau. Fourteen stations." Her hand was shaking on the pole. "The way in to the catacombs, chéri."

Scene 13

The glass gates at the Étoile were taller than a man. Maksym swung himself over one with his right hand. The bitten hand hurt, but the left one had a bullet hole through it. Kushnir climbed after him, slower, and the hem of his coat tore. Far down the platform a man with a big pack on his back disappeared into the last car of a train. Maksym jumped through a door two cars from the end, and Kushnir squeezed in behind him.

"Not here," Kushnir said quietly. "Too many eyes. We follow."

At Kléber Yvonne leaned out of the open door and pulled her head back in. "Two cars in front. The cap."

She stepped out onto the platform and pulled Jay out after her. Up the train, the two men stepped out too. The warning tone sounded. Yvonne pushed Jay back through the door as it closed. The two men jumped back in at the last second.

At Trocadéro she did it again. Two police officers stood on that platform, talking into their radios.

"They cannot tell if we are getting off or staying on," she said. "So they must stay close and watch every door. And with all these people and police, they will not try anything in here."

"Where did you learn this?"

"American spy films." Her hand on the pole was white.

After Passy the train came out of the tunnel and ran out over the Seine on a high bridge. The Eiffel Tower stood so close it filled the windows. Below, people walked along the river as if nothing had happened.

At Denfert-Rochereau she waited until the warning tone. "Now."

They jumped out as the doors closed and ran for the stairs. Jay looked back from the first step. The two men had forced a door open and were out.

Across the square stood a small old stone building with a long line of people outside it, and a guard walking down the line, sending them away. Two soldiers in camouflage stood by the door with rifles.

"C'est fermé, madame. Il y a eu un attentat." (It's closed, madame. There has been an attack.)

Then the guard looked again. "Docteur Lefèvre?"

Jay looked at the soldiers. "Why not them? They've got guns."

"Then a police station all night, and the bag on a table," Yvonne said, without taking her eyes off the guard. "The police were with us at the Étoile. It did not help. Your choice, chéri."

The wool cap was coming through the traffic.

"Down there."

The guard looked at her swollen lip and her bandaged finger, sighed, and opened the door just wide enough. "You stay on the visitor path," he told Jay. "Behind the iron gates it is forbidden. For everybody."

The door shut behind them, and a bolt slid across.

Stone stairs turned down and down in a tight spiral. The air grew cold and smelled of wet rock.

"Last winter I spent six weeks down here taking samples from the bones for the Centre," Yvonne said. "He brought me coffee every morning. Twenty metres down. Under Paris there are about three hundred kilometres of old stone quarries. The visitors see one and a half. The bones of about six million people are down here."

At the door above, the guard raised his hand to a small thin man in a torn coat. "Closed, monsieur."

"A man and a woman just went in."

"Staff."

One of the soldiers shifted his rifle. Maksym's hand moved inside his coat. Kushnir put two fingers on his arm. "No."

At the corner of the square Kushnir picked up a leaflet from the pavement: a map of the visitor path, and under it, *A small part of about 300 kilometres of old quarries under the city.*

"They have to come out," Maksym said.

"Where?" Kushnir held up the leaflet. Then he looked at Maksym's wool cap, and at his own torn coat. "Everybody at the Étoile saw a wool cap and a dark coat. First we buy new clothes."

Scene 74

At the bottom of the stairs Jay took out his phone to call Davenport. No signal.

He held it up and turned in a circle. Nothing. "Is he alive?"

"We cannot know from down here," Yvonne said. "Come."

The visitor path ran ahead between walls of stacked bones, lit by lamps every few metres. Where a dark side tunnel opened off it, a low iron gate closed the way. Yvonne looked back up the path. Then she swung one leg over the gate.

"He said it's forbidden," Jay said.

"He said it is forbidden for visitors." She held out her hand for the pack. "Give it to me, then climb."

Beyond the gate there were no lamps. They used their phones as torches. Yvonne found her way through the maze with ease.

The scene was creepy.

Millions of skulls seemed to watch and follow them from their empty eye sockets, brought to life by the shifting shadows of the phone lights.

Thousands of untold stories. Forgotten.

Stories of illness, suffering, abuse and misery.

Stacked one on top of the other. Sharing the same resting place.

No tombstones.

Lost.

Now and then a stone monument, with an inscription and the name of the cemetery the remains had come from.

"And to add insult to injury," Yvonne said, "every day hordes of visitors come down here. They smile stupidly and take selfies, with row after row of skulls as a macabre background, and post them at once on social media."

"Six million nameless souls," Jay said, "trying to rest in peace."

"It is impossible to rest. An endless stream of tourists, with their ordinary faces and their mass-produced clothes, rushing towards the catacombs."

"All of them on holiday," Jay said, "trying to have a little fun before going back to living their lonely lives in quiet desperation."

"And asking all kinds of questions that no one can answer," Yvonne said, "because no one knows."

After that they walked for more than two hours without a word. Then Jay said, "This isn't a tourist place, I assume."

"No. But I have been here before, looking for artefacts."

"Among the skulls?"

"Exactly."

"Now what?" Jay said.

"Now we spend the night here. It is best to wait until things calm down up there."

"Great. How many skeletons did you say?"

"About six million."

"Why did you choose this place to hide?"

"Because they will never find it here."

"Find what?"

"The Temporal Viewer, silly. We need a place to hide the machine. This is perfect."

"Why?"

"Because I know this place inside out, even the parts nobody visits. The Temporal Viewer could go behind any one of six million skeletons. They will never find it."

If there was one thing Jay Davies admired, it was a brilliant mind, and Yvonne Lefèvre had one. Not just brilliant: witty, beautiful and brave. How come she was not with someone? Or maybe she was.

"Do you know how to get out?" Jay asked.

"I must. Down here there is no GPS."

"Okay. Let's rest. This thing is heavy."

They set the pack down against the wall and sat next to each other. Once again their lives were in danger because of the Temporal Viewer. Both of them were trying to take in the upheaval this alien technology had unleashed.

Yvonne broke the silence. "You know, I have always wondered about the millions of people who rest here. Who were they? How did they live? Did they have a family to take care of, or someone to take care of them? Was there love in their lives?"

"I can answer that," Jay said.

"How?"

"We have one night to spare, and the Temporal Viewer with us."

“Will it work on skulls?”

“It will work.”

“I feel a bit uncomfortable disturbing their peace,” Yvonne said.

“They’re already disturbed by millions of tourists every year. At least we could see the life of one of these poor souls, and see the face of one of these miserable, nameless victims.”

“I suppose so,” she said. “But the skulls themselves cannot give us anything. They were never exposed to light, were they?”

“That’s right. We’d need a piece of clothing, or hair, or something else. But I won’t do it if you feel uncomfortable.”

“No, you are right. At least one of them will have the chance to tell his or her story. To have a voice.”

Without another word, Yvonne reached up to the wall and pulled out a loose stone with a mark scratched on it. Behind it was a small bundle of cloth.

“I did some studies down here. We were asked to authenticate and date some objects that were found.”

She unwrapped the cloth. Inside lay a small round metal object with a loop on the back.

A button.

“I found it among the remains of someone who was dug up and brought here.”

“This will work,” Jay said.

Jay used the backpack as a table and started the Temporal Viewer. With growing skill, he aimed the many-coloured beam at the button and wound back through time at high speed until he could go no further.

YEAR: 1685

MONTH: 5

DAY: 23

HOUR: 14

MINUTE: 02

SECOND: 34

MILLISECOND: 567

“This is when the button was made,” Jay said. “Let’s go forward in time.”

He turned the wheels forward until a woman's face seemed to peer down at them, very close.

"This must be when the button was being sewn onto something," Yvonne said.

A threaded needle came closer and closer until it looked like a giant spear.

"Let's move on," Yvonne said.

Jay turned the wheels until the button stopped moving.

"This must be the tailor's shop. Jump forward."

Jay did. The scene was different. It was a clothes shop from the seventeenth century. A crowd of faces peered close to the button and went away. At last the faces of a man and a woman remained.

"Why the wigs?" Jay asked.

"Oh yes," Yvonne said. "In the late seventeenth century wigs were very fashionable in France."

"Because?"

"Freeze the scene."

Jay did.

"For several reasons. Vanity, fashion, wealth, health and shame."

"I understand vanity and fashion. But wealth? And certainly not health, or shame."

"In 1655 King Louis the Fourteenth began to lose his hair. He was seventeen, and afraid that baldness would damage his reputation, so he brought wigmakers to the palace, forty-eight of them, to make wigs for him. After a while the fashion spread all over Europe."

"Why wealth?" Jay asked.

"Because as the fashion spread, the price of wigs, or perukes as they were called, went up, and the upper middle class showed off their money by wearing them."

"Ahhh. And health?"

"Before the wig craze, long natural hair was the fashion. But people did not wash much in those days, so lice were everywhere. To get rid of them, people shaved their heads and wore wigs. The wigs got lice too, but you could send a wig to the wig cleaner, who boiled it."

"Gross!" Jay said. "And the shame?"

"At the end of the fifteenth century an epidemic of syphilis broke out, and it spread through Europe in the sixteenth and seventeenth centuries. By the time of these two it was less violent than before, but it was still common in France."

“And?”

“One of its effects is hair loss. People wore wigs to hide the disease, until their noses and lips began to fall off.”

“My God, how awful,” Jay said.

“Yes. A terrible disease, until penicillin ended its reign of terror.”

“Wow. Your knowledge is encyclopedic.”

“You learn a thing or two when you dig into the past,” Yvonne said. “Let’s go on.”

Jay tilted the wheel clockwise to play the scene. The couple seemed to be arguing.

“Do you understand them?” Jay asked.

“It is old French, a bit like the French still spoken in some parts of Quebec, but I can catch enough of it. The woman is asking the man to buy her this dress so she can go to a party at the King’s court.”

“Why the argument?”

“He says she already has many dresses. She does not need another one.”

“And?”

“She says she cannot go in the dress she wore last year. Everyone will remember it.”

“Ahhh. Women. Some things never change,” said Jay.

Yvonne elbowed him. “Just skip the whole thing.”

Jay moved forward through the life of the dress. It was fascinating. He had seen scenes like these in historical films, but the make-up was different, mostly because of the powdered faces. The luxury of the King’s court, the music, the dancing: it was dazzling.

Eventually it was all over. The dress spent more time hanging than being worn. It ended up on a rubbish heap.

Almost at once several gaunt faces appeared. A brawl broke out. They were fighting over the dress!

After a while the winner ran off with it and hid in an alley. She was a young woman who seemed to have had a hard life. She had scars on her face and missing or rotten teeth, and she was clearly in the early months of pregnancy.

Jay stopped.

“Why would this poor woman want a fancy dress, instead of selling it for food or a bed?” he asked.

"She must be a prostitute," Yvonne said. "This poor girl needs the dress to attract customers."

They followed the girl's journey through misery, abuse, hunger, beatings and disease. At last, in the winter of 1693, she crouched down in a dark alley and gave birth right there.

"Oh my God," said Jay. "Poor woman!"

To protect the baby from the bitter cold, she opened the dress and put her inside.

Jay and Yvonne watched this real-life drama unfold from the button's point of view.

After a while the young mother lay on her side, shivering uncontrollably from the cold and the fever, still trying to protect the baby.

And finally the shivering stopped.

Nothing moved any more. Not her. Not the bulge under the dress.

The next morning a crowd of curious faces gathered round, talking in whispers. Jay could only make out one word: *morte*.

"They are both dead," Yvonne said, a tear running down her face.

Two hours later the bodies were thrown onto a horse-drawn cart and dumped with other corpses into a hole in the ground.

"A mass grave for the poor," said Yvonne.

Then everything went dark.

"Stop," Yvonne said. "After a few years the body and the dress rotted away. About a hundred years later the city emptied its old cemeteries and brought the bones down here at night, in carts covered with black cloth. The button came with them. That is where I found it."

Jay turned off the machine. They sat on the ground in silence.

Jay plugged their phones into the Temporal Viewer's battery. The good Rashid had added USB charging ports to it. They switched on one torch between them.

They were silent for a while.

Finally Jay said, "Even the most realistic, raw film doesn't come close to reality, does it?"

"Exactly. Films cannot recreate the ugliness, the scars, the missing teeth."

"The dirt!"

"The appalling misery, the public executions, the beatings, the people with terrible diseases. They use modern, attractive, healthy actors with make-up. Acting has its limits."

"Not to mention that in a lot of films the actors' clothes look spotless and pressed," Jay said. "The cloth is new. The shoes are hardly worn."

The reality had been much harsher and cruder than any artistic recreation, as the Temporal Viewer had just shown them.

Trying to lighten the gloomy mood, Jay said, "I don't want to pry, but are you with someone?"

"You mean in a relationship?"

"Yes."

"I have a lot of friends I really enjoy spending time with, but my research post is demanding, and I have focused mostly on my career."

"Is that a yes?" Jay asked.

"I recently broke up with someone I lived with for three years."

"May I ask why?"

"Because he wanted to commit."

"And you didn't?"

"Spending the rest of my life with someone is not in my plans at the moment. My ex-boyfriend was not 'they lived happily ever after' material. He wanted to get married and have a lot of children, and I am not at that stage of my life."

"I understand," Jay said. "I've been focused on my work too."

"Are you in a serious relationship?" Yvonne asked, without looking up.

"No. Same as you. Lots of friends, lots of fun. But few women can stand talking about quantum optics."

"Or bombarding Bronze Age objects with a particle accelerator," Yvonne added.

They both laughed.

The rest of the night passed in sleepless silence. Both of them were shaken by the events of the day, thinking about their new reality and struggling with what they felt for each other, without knowing how to go on.

Jay thought about turning his face to her and kissing her, but his fear of rejection was stronger. He did not.

The stupid high-school trauma with Monique Thornton still haunted him, all these years later.

They simply held hands and leaned against each other.

Scene 75

In a low side tunnel a small skull sat on top of the stacked bones, smaller than all the others. A child's.

"I know this place," Yvonne said. Behind the skull there was a gap in the wall of bones, deep and dark.

"Up there the police will search every bag after an attack," she said. "And those two are looking for a man with a big backpack. Without it, you are just a tired American."

Jay looked at the gap for a long time. Then he slid the straps off his shoulders.

"Only until we have a plan. Then I come back for it."

He pushed the pack deep into the gap. Yvonne set the child's skull back in front of it.

"The killers are waiting for us outside," Jay said.

"We are not going out the way we came in. The quarries have ways in all over the city. Manholes in the street, cellars, old wells. When I was younger I was a cataphile for a while." She saw his face. "The people who come down here without permission. Almost a secret society."

"So you're a Girl Scout," Jay said.

"A good comparison. Come."

They walked for hours, until a narrow tunnel brought them up behind a sheet of wood into the cellar of a grocery shop, among boxes of tinned tomatoes. The grocer looked up, saw the white dust on them, and went back to his crates. He had seen cataphiles come up through his cellar before.

On the pavement the phones found a signal. Jay called Davenport's number.

"Are you a relative of Mr Davenport?" said a voice he did not know. "I can only give information to the family."

"Then he's alive," Yvonne said. "And in a hospital. The big hospital for the worst injuries on that side of Paris is Beaujon. Where Jeff is."

Scene 75

The safe house was a flat on the fourth floor of a grey building, with brown wallpaper, a table and four chairs. Maksym and Kushnir arrived after eleven in new coats.

"Three hundred kilometres of tunnels," Maksym said, and dropped the leaflet on the table. "Hundreds of ways out. We will never know where they come up. And I want my money. The deal was one million when I led you to the machine and the people who can work it. I led you. They escaped because your team is useless."

Kushnir looked at him for a long moment. "That is fair. I will send someone to the embassy."

He went out to phone in the hall. Maksym took the Makarov out of his coat and held it in his lap under the table, in his bitten right hand.

Kushnir came back with a bottle and two glasses. "Let us drink, Maksym, and remember the old days."

They drank. Forty-five minutes later a young man from the embassy brought a metal suitcase with a combination lock. Kushnir lifted it onto the table with the lid towards Maksym and opened it, so that the lid stood up between them like a wall.

When his hand came up over the lid, it held a pistol with a long silencer.

"The Democratic Republic of Krakughystan has a long arm and a longer memory," Kushnir said. "We do not forget deserters."

"Remember the crates for Gambalia," Maksym said, watching his face. "The ones you signed for."

For half a second Kushnir's face changed.

"Business is business," he said. "But you no longer serve us."

He aimed between Maksym's eyes. Under the table, Maksym fired first.

The bullet hit the steel lid of the suitcase and threw it back into Kushnir's wrist. The silenced pistol coughed, and the wallpaper beside Maksym's head burst open.

They had both missed.

Maksym kicked the table into Kushnir's legs and was out of the door before the glasses hit the floor. He went down the back stairs fast and quiet, the way he had been trained, and was gone.

Kushnir sat on the floor among the broken glass, holding his wrist, with vodka soaking into his new trousers. Eight men in Paris, two of them dead. The French calling it terrorism. And Belenko loose, knowing about the crates.

He scrolled to a number he had never wanted to call, and looked at it for a long time.

That night Anatoliy Kushnir called the fourth floor of the ministry in his own capital, and asked his generals for more men, and for permission to do whatever it took.

Scene 77

At half past one on Saturday Yvonne walked into Beaujon through the staff door in a nurse's white tunic a size too big, with her friend Amélie's pass clipped to the pocket. The reader beeped green. Nobody looked at the small smiling photo on the pass.

Hill was sitting up in bed. Liz stood by the window. Rashid sat on the windowsill with his laptop on his knees.

"We saw the Étoile on the news," Hill said. "We've been worried sick."

"Jay is safe at the hotel. Davenport was shot for us. He stood between us and the gun and told us to run. So we ran. With the machine."

"And the machine?" Liz asked.

"Hidden. Deep in the catacombs. Jay pushed it in with his own hands. Without me he would be lost down there in ten minutes."

Rashid looked up from the laptop. "And the switch? Jay pressed it this morning?"

"At nine, from a phone box in a café, with his phone on for thirty seconds and then off again. He said you would see it."

"I saw it." Rashid closed the laptop. "Twenty-four hours. Every day. If he forgets, the world gets a diamond."

"He will not forget," Yvonne said. "I will not let him."

Capitaine Leclercq came up the stairs with his raincoat over his arm in time to see a nurse go into Hill's room. He had seen her face for one second as she turned the handle. Yvonne Lefèvre, who was a physicist, not a nurse.

The attack at the Étoile was not his case. In France an attack like that goes to the anti-terrorist prosecutor. But that morning they had sent him a picture from a traffic camera above the square: a big man with a cut forehead and a bandaged hand, holding a pistol. His man. The man who shot Professor Hill. And one of the dead attackers had a diplomatic passport in his pocket. Krakughystan.

Leclercq took out his phone. "The Lefèvre woman is at Beaujon, dressed as a nurse. Nobody stops her. I want to know where she sleeps."

The wounded American was two doors down. Davenport lay propped on three pillows, his right shoulder strapped and the arm in a sling, an unlit cigar on the tray table.

"Who were they after at the Étoile, Monsieur Davenport? Foreign diplomats shooting in Paris, in the middle of the tourists. What is worth that?"

"That's classified, Captain."

"Your embassy has not told our Foreign Ministry that you are here. That is required for every diplomat. So you are a foreigner in France, like any tourist, and you obey French law." Leclercq put his card on the tray, next to the cigar. "If you hear from them, call me. And do not leave France."

"I can't even lift my arm, Captain."

At the end of the corridor there was a plastic chair from which Leclercq could see Hill's door. He sat down on it and opened a newspaper.

Ten minutes later Liz led Yvonne to Davenport's room.

"Thank you for saving us," Yvonne said.

"Just a scratch. It went through and missed the bone." Davenport turned his head on the pillow. "The machine. Only you can take us to it?"

"Only me."

"Then don't get yourself killed. When they let me out of here, we move it to the embassy, properly. No convoy." He nodded at the card. "A French captain was just in here asking where you two were. I said I didn't know."

Yvonne put on a paper mask and walked down the corridor. She passed a man in a rumpled raincoat on a plastic chair. When she reached the stairs, he folded his newspaper and stood up.

Scene 78

At one in the morning the place Denfert-Rochereau was empty. A grey van with ordinary plates stood beside the small stone building.

"You should be in bed," Jay said.

"In France you can walk out of any hospital you like. You sign a paper that says the doctor told you not to." Davenport opened the door with his left hand. "I signed it. Last chance, Davies. It's your machine. Your call."

"The embassy," Jay said. "Tonight. Then we talk about planes."

The night guard came to the gate in a thick jumper. "Again, madame? At this hour?"

"The samples cannot wait."

They went down the hundred and thirty-one steps with torches. At the iron gate Davenport climbed over with one arm, swearing under his breath all the way.

"This reminds me of Gambalia," he said, in the dark between the skulls.

"The dark?"

"Being surrounded by the dead."

After an hour Yvonne stopped in the low side tunnel and pointed her torch at the child's skull. Jay lifted it down, reached into the gap, and his fingers found the strap. The pack was heavier than he remembered.

It was half past three when they climbed into the van.

"Then we fly you home," Davenport said. "A demonstration in Washington. People high up. Then the President and Congress are behind us."

"And the army," Jay said.

"Would you rather the army of Krakughystan had it? The minute a foreign government sent soldiers to shoot people in the middle of Paris, it became a weapon."

The van braked hard. Blue light filled the windows. Two police cars stood across the street, and a small man in a rumpled raincoat got out of one of them.

"You're blocking an embassy vehicle, Captain."

"I see no diplomatic plates, monsieur. And you have no immunity. We spoke about it." Leclercq turned to the back of the van. "Monsieur Davies. Madame Lefèvre. Three people died at the Étoile and you ran away. In France the police may keep a witness four hours to take his statement. Not one minute more. And this time the bag comes with us."

"Keep it on your back," Davenport said. "I'll have you out in an hour."

Jay climbed down from the van with the pack on his shoulders and walked up to the little man in the raincoat until they were close enough to touch.

“Capitaine. You can take it. Nobody can open it but me. You know that already, I think.”

“I am beginning to.”

“Then know this too. If you keep my phone away from me for more than a day, something happens that nobody can stop. Not you, not me. Something your President will have to explain to every other president on Earth.”

Leclercq looked at him for a long time under the blue lights.

“Is that a threat, Dr Davies?”

“It’s a clock,” Jay said. “And it started at nine yesterday morning.”

Leclercq took off his glasses, wiped them on his tie, and put them back on.

“Then I think,” he said, “you had better tell it to her yourself.”

He opened the back door of the police car. Jay got in with the pack on his knees, and Yvonne got in beside him, and took his hand, and did not let go of it all the way across Paris.

Scene 79

The pack sat alone at the end of a long table under a white light, with a soldier on each side of it. The room had no windows. It was somewhere on an air base outside Paris. Jay had slept for an hour on a bench in a cell before a gendarme brought him here.

On a television on the wall, with the sound off: the Arc de Triomphe under police tape, a burned-out grey car, a taxi with its windows gone.

"Three dead at the Étoile," Yvonne read from the bottom of the screen. "Police are looking for a man in a wool cap."

The door opened. Two men in dark suits came in first and looked at every face in the room. Then a woman in her fifties in a navy suit, with short grey hair and small gold earrings that looked older than she was.

Everybody stood up.

"Sit down," she said in English. She stayed standing. "I am Marie Dubois. I am the President of the Republic. Yesterday afternoon men with diplomatic passports fired rifles at an American embassy car in the middle of my capital, among the tourists. One of them is dead in a drawer, and his passport says Krakughystan." She dropped a thick file on the table. "Capitaine Leclercq has been writing all night. I have read every page. I believe perhaps half of it."

She turned to Davenport. "A gun battle at the Étoile. Three dead, one of them an American driver from your embassy. A kidnapping in a bar where a man flew across a room. An American team working in France without asking anybody. But that is not why you are here." She pointed at the pack. "That is why."

"That's classified, ma'am."

"Not in France, monsieur." She opened the file at a yellow tab. "Charles de Gaulle airport. Customs asks Dr Davies what is in the bag. He says a quantum light meter. And a French scientist calls the director of customs and vouches for it personally." She looked at Yvonne. Yvonne said nothing. "It is not a light meter."

"No, madame," Jay said.

"In France, when you declare goods as something they are not, customs can take them. So this device is confiscated, and Dr Davies and Dr Lefèvre stay in our custody."

"He's an American citizen!" Davenport said.

"Lower your voice, monsieur. Your citizen broke our laws as a guest in our country."

"May I say something?" Jay said.

The President raised one hand at Davenport, and he closed his mouth.

Jay told her. A thrift store, four dollars and ninety-nine cents. A black sphere from the sky. An engineer called Natoshi Sakamoto. Every object remembers everything it has seen and heard, and the machine plays it back.

"It sounds like one of your American flying-saucer stories," the President said.

"Then show her," Yvonne said quietly. She walked round the table. The two bodyguards stepped in front of the President. "May I borrow one of your earrings, madame?"

The President looked at her for a moment. Then she unhooked one small gold earring and held it out. "If you give it back."

"Is there any danger to the President?" the older bodyguard asked Jay.

"None. Otherwise you can shoot me afterwards."

"I would rather shoot you before, monsieur."

The President almost smiled, and sat down at the head of the table.

Jay laid the earring in front of the pack. "Give me a day that only you know about. Then nobody can say it was faked."

"The last days of May 1944."

The years blurred backwards. A beach. The sea. Low grey shapes along the shore.

"There."

"If you want to see it from inside," Jay said, "put a hand on my shoulder. Only the people touching me go in."

The President put two fingers on Jay's sleeve and waved her bodyguard back.

They stood in a grey morning by the sea. For the bodyguards, their President was standing in a giant beach that filled the room, through the table and the walls.

Two hands held an old camera, a woman's hands. She took one picture after another of the shapes along the shore: concrete, and long guns pointing at the sea.

Jay wound forward until a woman's face appeared in a mirror, in a shabby bathroom, wearing the same small gold earrings. Her face was thin and pale, as if she had not slept for days. She looked very much like Marie Dubois.

"My grandmother," the President whispered. A tear ran down her face. "She was in the Résistance. She photographed the German guns along the coast of Normandy, and the pictures went to England, for the landings. These were her earrings. I was named after her."

"Play it," she said.

The woman in the mirror covered her face with her hands and began to cry.

"Stop. That's enough."

The room came back. The bodyguards stepped in at once. "Madame? Vous allez bien?" (Are you all right?)

"She had just lost the man she loved," the President said. "He was in the Résistance too. Killed one night on a mission like that one."

She sat for a long time and said nothing.

Then she stood up. "Take Monsieur Davenport back to his embassy. Dr Davies and Dr Lefèvre stay in custody while the police investigate the Étoile. The machine stays with France."

"Then you need to know about the clock," Jay said.

The room went quiet. Leclercq, by the door, did not move.

Jay told her. Pattern 413. The diamond. Eleven seconds. A computer that would open every lock on Earth. And twelve pages of plain words and numbers, sitting on machines in eleven countries, waiting for a signal from his phone once every twenty-four hours.

"If the signal doesn't come," he said, "the recipe goes to every university on Earth at once. Every country gets it on the same morning. Including yours. Including Krakughystan."

The President looked at him for a long time. When she spoke, her voice was very quiet.

"You are threatening France, Dr Davies."

"No, madame. I'm threatening everybody. The same threat, to everybody, at the same time. That's the only way it's fair." He did not look away. "Nobody can steal this machine, because the moment anybody steals it, they lose the thing they wanted it for. Not you. Not my own government. Nobody."

"And if I put you in a cell and take your telephone?"

"Then in about two hours you'll find out whether I'm lying."

Leclercq made a small sound at the door that might have been a cough.

The President turned the gold earring over in her fingers, slowly, and put it back in her ear.

"My grandmother photographed guns on a beach," she said, "so that the people who had to land on it would know what was waiting. She did not know if the photographs would ever arrive. She did it anyway." She looked at Jay. "You will stay in custody, both of you, until I understand this. The machine will stay with France. And once a day, Capitaine Leclercq will put your telephone in your hand for one minute, and watch you press your button, and take it back."

"Thank you, madame."

"Do not thank me. I have not decided yet whether I should have you shot." She walked to the door, and stopped, and did not turn round. "Everybody or nobody, you said. That is a good rule, Dr Davies. It is also a very lonely one."

She went out.

Scene 88

Boris had watched the gate of the air base for two nights from behind a closed garden centre, in a different car each night. He was one of the six men Kushnir still had in Paris. Because of the dead at the Étoile it was a terrorism case, and in France that kind of custody can last ninety-six hours.

At ten to one in the morning the floodlights over the yard came on, all of them at once. A blue gendarmerie van drove out of a hangar, a second behind it, and a dark car with no markings in front.

Two gendarmes brought a man and a woman out of a low building. Both held their hands together in front of them, and the floodlights caught the steel on their wrists.

“Davies,” Boris said. “And the French woman.”

A third gendarme carried a black bag with shoulder straps in both arms, the way a man carries a sleeping child. A white label hung from one strap. He climbed into the second van.

A small man in a rumpled raincoat came out last, looked once at the sky, and got into the dark car.

Boris followed them, with Dmitri beside him, into the south of Paris, along a street with plane trees on one side and a very high stone wall with no windows on the other. The convoy stopped at a tall gate in the wall and went in.

Dmitri walked back to the corner and read the sign over the gate on his phone. “La Santé prison. The only prison left inside Paris.”

“La Santé is a prison for men,” Kushnir said on the satellite phone, thick with sleep. “Why would the French put a woman in a prison for men?”

“I don’t know why, Colonel. But I saw them both go in, and the bag behind them.”

“You do nothing. You watch. The men from home land tomorrow.”

The corridor was painted pale green and smelled of new paint. The guard unlocked the last steel door, and took off their handcuffs.

“This is a prison for men, Capitaine,” Yvonne said. “Women go to women’s prisons. That is the law.”

“This is the wing for prisoners who must be kept apart from all the others,” Leclercq said. “Famous men. Policemen. Nobody else in the building will see you. The order came from the President herself. Both of you and the machine behind the same wall. Two places means two places to attack. The bag is in a locked room in the administration building, with two of my officers outside it, and your telephone is in the bag. When they rebuilt this prison they put in machines that block every mobile signal inside the walls. So once a day I take you to the gate, myself, and you press your button on the pavement, and I bring you back.”

"The woman in the black robe talked for ten minutes," Jay said. "I understood four words."

"She is a judge. You brought into France, without declaring it, a machine that soldiers can use as well as scientists. The law gives up to five years. She can keep you here until the trial."

"You know a lot about this place," Yvonne said.

"I was the police officer on the building site when they rebuilt it. I know it better than my own flat." He looked at them both for a moment. "Good night."

The lock turned twice.

"They keep us alive until they learn how the machine works," Jay said, and put his hand on his left shoulder. "Until somebody cuts this out of me."

"And then they do not need us at all."

Yvonne pulled off her shoes and dropped them on the floor, one after the other. "We are screwed."

Scene 8!

The next night, at twenty past two, a white van with a florist's name on its side parked under the plane trees forty metres beyond the prison gate. Nobody got out.

In the back sat Colonel Anatoliy Kushnir, with his right wrist strapped under his cuff, and eleven men in dark clothes who had come in that afternoon on diplomatic passports, with long bags that no customs officer in France was allowed to open.

"The President of the Republic says it stays in France," Kushnir said quietly. "So it leaves tonight."

"And the American's clock?" said the man beside him, the one who led the eleven. "The colonel heard what the policeman said on the telephone. Every university on Earth."

"An American story to frighten old women." Kushnir looked at his watch. "And if it is true, the recipe goes out to everybody. Then Krakughystan has it too. We lose nothing. Everybody else loses their secrets." He smiled for the first time in a week. "Go."

At eleven minutes to three a charge on the delivery gate went off with a flat, heavy bang. Every car alarm in the street started at once. The lights along the top of the prison wall went out.

Leclercq was asleep in his car round the corner. He had not gone home since the transfer. A man with a diplomatic passport had died at the Étoile, and he did not believe the men who sent him had gone home.

His radio was already talking. Armed men in the yard. The guards inside a French prison carry no guns. They were falling back and locking doors behind them.

He ran in at the staff entrance on the other side. His two officers were still at the door of the locked room, pistols out.

"Open it. I'm taking the bag. The order says keep it in France. In ten minutes it will be on its way out of France."

He signed the book by the light of his phone, picked up the bag in both arms, and ran to the pale green corridor, where a guard with a ring of keys was waiting, white in the face. Outside, two shots, then a long burst, and shouting in a language Leclercq did not know.

"Open the cell."

Jay and Yvonne were standing in the middle of the cell, dressed, in their shoes. They had heard the bang.

"Allez! Allez!" (Go! Go!) Leclercq pushed the bag into Jay's arms. "Your telephone is in it. I know a way out."

At a corner he opened a narrow grey door marked ENTRETIEN (Maintenance): a cupboard of mops and buckets. He pulled the shelves away from the back wall. Behind them was a painted panel held by four screws, and he turned them out with the edge of a coin.

"When they rebuilt this place, they joined the prison drains to the new sewer under the street, and they walled up the old way down. I was standing here the day they did it." Behind the panel was a square of black, an iron ladder and a smell of wet stone and worse. "Put the shelves back," he told the guard. "You did not see us."

"Chéri," Yvonne said to Jay, "hold your nose."

Jay put the pack on his back, over the shoulder with the chip, and went down the ladder.

On the boulevard on the other side of the prison a rented grey van had been parked every night since Rashid's dot stopped at the gate. Rashid sat in the back in front of a laptop, watching the street swing in the picture from a small camera on the front of Davenport's helmet. Davenport had walked out of Beaujon that afternoon with his arm in a sling and a paper saying the doctors had told him not to.

"No guns," Davenport told his three men from the embassy. None of them carried one. "We are not police in France. One shot in this country and we never get Jay home. We find him and we bring him out."

"And if they shoot at us?"

"Then you duck."

They went in through the smoking hole where the gate had been, behind everybody else. Police cars arrived in the street, blue lights and sirens, and men crouched behind them and fired at the shadows by the gate.

In a dark corridor a small man with night-vision goggles and a strapped right wrist stepped out of a side door with a short rifle. Davenport hit the rifle up against the wall with his good forearm and drove his shoulder into the man's chest. The rifle butt hit his helmet, and he saw green lights. He grabbed the strapped wrist and squeezed. Kushnir screamed and let go of the rifle, and the two of them, one good arm each, kicked and pushed in the green half-dark.

"Horatio!" Rashid in his ear. "Left! The last door!"

Kushnir broke free and ran, holding his wrist. Davenport followed.

At the end of the pale green corridor the door stood wide open. Kushnir got there first, Davenport one step behind, and three of the eleven came round the far corner with their rifles up.

Nobody fired.

They all looked into the cell. A narrow bed, a folding bed, a table, two pairs of prison slippers side by side. Nobody inside.

Out in the street the sirens multiplied. Kushnir said something short to his men, and they backed down the corridor with their rifles up, and were gone.

Davenport bent and looked at the lock. No mark on it.

"Somebody opened this door with a key," he said.

In his ear Rashid let out a long breath. "Horatio. Nothing. The dot is still at the gate, where it was when the walls swallowed it. Wherever they are now, there is no signal."

"A key, no signal, and no tracks." Davenport straightened up slowly. "In this city that means underground."

Scene 82

The tunnel was brick, curved like the inside of a barrel, with a stone walkway along one side and black water along the other. Leclercq walked in front with his phone's torch held high and did not look at the rats. At every corner a blue enamel plaque gave the name of the street above. "So the men who work down here always know where they are," he said.

After twenty minutes he climbed an iron ladder and pushed up a round lid with his shoulder. They came out in the middle of a quiet street of tall stone buildings, with sirens far away behind the roofs.

The lift was the size of a telephone box. Nobody spoke on the way up to the fifth floor. Yvonne held her breath the whole way. Jay tried to and could not.

A light came on at the end of the hall, and a woman came out in a dressing gown, a head taller than Leclercq and twice as wide, her grey hair flat on one side from the pillow.

"Tu pues la merde!" she said. Then, in English, for the American, with a heavy accent: "You stink like shit. All three of you."

"Bonsoir to you too, chérie," Leclercq said. "Lynette, Dr Davies and Dr Lefèvre. Our guests. A shower, and something hot to eat?"

On a hook by the door hung a dark blue police jacket, bigger than any coat Leclercq could ever wear. On the fridge was a calendar of two columns of shifts, FRANÇOIS and LYNETTE, and photographs of two grown children.

"My wife is a police officer too," he said. "For twenty years we worked opposite shifts, so one of us was always home with the children. Do not be afraid of her. Not too much."

Lynette brought towels, and clothes the children had left behind. When they came out of the shower, washed twice, there was a big pot on the kitchen table: thick soup with ham, cabbage, beans and potatoes.

"Garbure," Lynette said. "From the south-west. My mother's. It is better from yesterday."

For ten minutes nobody said anything, and nobody needed to.

In the pack on the chair Jay's phone buzzed once.

"The signal," Jay said. "The first since the prison. Rashid's tracker talks through my phone. If he's watching, he knows we're alive."

"Who else can see it?"

"Only Rashid."

"And the clock," Yvonne said.

Jay took the phone out of the pack, opened the app and pressed the button. A small green word came up: RESET. Twenty-four hours.

Leclercq looked at the phone a moment longer, then poured more wine.

"Now," Lynette said, with her elbows on the table. "Tell me why I have two scientists who smell of the sewer in my kitchen at four in the morning."

He told her: the Étoile, the President's earring, the men at the prison with diplomatic passports, and the clock in the American's telephone.

"Everywhere this machine goes, people die," he said. "French people. The President gave this case to me. If it leaves France while I am in charge of it, I am finished."

"You are already finished," Lynette said. "You signed it out with your own name. They will come here first."

"In the morning. Tonight every policeman in Paris is at La Santé. By noon you must be somewhere else."

Lynette pointed her spoon at the pack.

"Your clock stops them stealing it," she said to Jay. "It does not stop them hunting you. They will never stop. Not Krakughystan, not the Americans, not anybody. Not until one of them has it alone. When it is a secret, everybody kills to have it alone. When it belongs to everybody, there is nothing to kill for. Give it to the United Nations. A commission of all the countries. Like the agency that watches over nuclear power."

"The President will call it treason," Leclercq said.

"You and I are police. We protect the people. Our children. The man in the street at the Étoile. That is my loyalty first."

"You can't just call the UN and ask for the Secretary-General," Jay said. "And if somebody puts you through, they'll think you're crazy."

"Not if they see it," Yvonne said. "Live. In front of the whole world. The networks, the newspapers, famous people. Then it is not a secret for anybody."

"The President too," Lynette said slowly. "In public, with cameras, she cannot stop it. She has to smile and come."

Everybody looked at Jay. It was his machine.

"Live," he said. "In front of everybody."

Lynette got up and fetched a second bottle.

Scene 83

On the small television on Lynette's kitchen counter, a steel gate lay bent inward in a prison yard, black with smoke. Three attackers dead. Two police officers wounded. Four men arrested, nationality not given.

A grey-faced man stood at a row of microphones outside the prison wall. MINISTRE DE LA JUSTICE (Minister of Justice). "No prisoner has escaped. I repeat. No prisoner has escaped."

"Menteur," Lynette said. (Liar.)

"He has to say it," Leclercq said. "Two escaped prisoners means names, and names mean questions about why a scientist from California and a woman from the Louvre were in La Santé. The President will never let anybody ask that. So nobody is looking for you on television. Everybody is looking for you everywhere else."

His phone buzzed. LE PATRON (The boss). A message: *Le registre. Ton nom. Appelle-moi.* (The book. Your name. Call me.) He turned it face down.

Yvonne called her director at the Centre on Lynette's phone, with the number hidden.

"Two policemen were in my office at seven this morning," the director said. "Where are you? No. Don't tell me."

Yvonne told her everything, in order, the way she wrote her reports.

"Yvonne, I have known you twelve years. If anybody else told me this, I would call a doctor. What do you want from me?"

"Take it to the head of the Louvre. A demonstration, live. On the Mona Lisa. Leonardo himself, in the room."

"No. A judge sent you to prison. If I walk into his office with this, I am finished before I sit down. She comes out of her glass case once a year, for one hour, with a room full of people watching every hand. People have thrown acid at her, and a stone, and a cup. You want me to put her in front of a machine nobody can explain, for an American with a backpack? It is a flying saucer, Yvonne." Her voice did not rise. "Don't call me again. For your sake too."

Yvonne's hands were shaking. Lynette took the coffee away from her and put a cup of tea in front of her instead.

"Not the Louvre, then," Jay said. "And the crowd would be a problem anyway. The globe opens eight metres wide. Everybody standing near me gets pushed against a wall they can't see. Children fall. Somebody shouts 'bomb'."

"Then from somewhere else," Yvonne said. "Somewhere we choose who stands near you."

"In three and a half hours you must be out of this flat," Leclercq said. "You have no car, and your faces are in every police station in Paris."

Jay looked at the clock on the oven. He put his hand over Yvonne's on the table, and she did not take it away.

"Somewhere else," he said. "We find the place."

Scene 84

The blue dot had not moved for five hours. Rashid watched it from the back of the grey van, and through the windscreen he could see the same quiet street, a bakery, a green door.

"We could have been here at four," he said.

"At four every cop in Paris was looking for whoever blew that gate," Davenport said. A fresh cut ran across his cheekbone. "Two Americans in a rented van two streets from a prison break."

On the panel by the green door, on the fifth floor: F. ET L. LECLERCQ.

"The cop," Davenport said.

"The cell was opened with a key," Rashid said. "Now we know whose."

A woman as tall as the doorway looked down at Rashid without any expression. "Oui?"

"It's okay, madame!" Jay's voice came from inside. "Let them in."

Rashid did not remember putting the laptop down. He had his arms round Jay before either of them said anything.

"Doctor."

"How long have you been watching that dot?"

"Since four oh seven."

Leclercq and Davenport looked at each other the way two men do after four hours in an interview room, one on each side of the table.

"Monsieur Davenport, you have a cigar in my wife's house."

Davenport put the cigar in his pocket. "You opened that cell."

"While somebody was blowing up the gate, and you were walking in behind them."

In the kitchen Yvonne put both hands flat on the table. "We do it live. In front of the whole world. Then nobody can steal it in the dark."

"A phone and a laptop put it on the internet from anywhere," Rashid said. "That's easy. And the clock keeps them from stealing it." He turned his phone round and round on the table. "But the clock does not stop a man with a rifle who only wants to make sure nobody else has it. Last night they did not come for the recipe. They came to take the machine and the two people who can work it, and the clock would have gone off, and they would not have cared."

"So the world has to see it," Yvonne said. "Not a video on the internet that anybody can call a trick. Live. With somebody beside us that the whole world believes."

"And when the whole world has seen it," Jay said slowly, "there's nothing left to steal. You can't steal a thing everybody saw. You can only share it."

Davenport looked at the table for a long time.

"Washington recalled me this morning," he said. "After last night. An FBI agent at an armed attack on a prison in a friendly country. They're sending a plane to Le Bourget at one, and if I'm not on it, I'm finished." He took the cigar out of his pocket, looked at Lynette, and put it back. "I'll be back in two days. They'll shout at me for one afternoon, and then the Director will want to know what I think. And what I think is that you are right."

"Monsieur Davenport," Lynette said, "that is the first sensible thing an American has said in my kitchen."

At ten to twelve Lynette pushed sheets into three big striped laundry bags.

"My van was outside the prison all night," Rashid said. "If one camera read the plate, they have my name."

"Then the van stays. My brother Pierre has a launderette, and a white van with his name on it. Nobody in Paris looks twice at a laundry van. Above the shop there is a room. Pierre knows his sister needs a favour. That is all he knows."

Jay put the pack into the biggest bag, and Lynette laid two sheets over it.

"Do not tell me the address," Leclercq said at the kitchen door. "In one hour my chief will ask me where you are, and I would like to tell him the truth. That machine does not belong to Krakughystan, or the Americans, or anybody. I am not sure it belongs to the President either."

At twelve a white van stopped in the street below with a smiling shirt painted on its side: LA LAVERIE AUTOMATIQUE DE PIERRE. Pierre came up, half the size of his sister, with a grey moustache, kissed Lynette on both cheeks, and asked no questions.

Through the small window in the van's back door Yvonne saw Leclercq come out onto the pavement with Lynette's hand on his shoulder, and press his phone to his ear.

"Oui, patron. J'arrive." (Yes, boss. I'm on my way.)

Scene 85

Two days later it was noon above the launderette, and the dryers were thumping under the floor. Davenport had come back from Washington that morning with a new cut over one eye, no explanation for it, and the Director's permission to stay.

"It's only a matter of time before they catch us or kill us," Davenport said from the curtain.

"Then we make it public. Soon," Yvonne said. "But where?"

"The Eiffel Tower," Rashid said.

"You're kidding, son. It's closed. A barrier across the gate and a soldier in front of it."

"That's why it works. Closed means empty. No crowd. Jay can open the globe up there, and nobody gets swallowed by it except the people we choose. The cameras send it out live. And first we make noise on the internet. A day, a place, a time. Everybody waits for it."

"And the French let us up there?"

"They will, if the right person asks," Jay said. "The President has a clock ticking in her own capital. She wants this over more than we do."

"Nobody will believe a live picture from three people the police are hunting," Yvonne said. "We need somebody famous beside us. Somebody everybody trusts."

"Not a president," Davenport said. "Every one of them wants this thing for himself."

"Not the one who speaks for every country," Rashid said.

"The Secretary-General of the United Nations," Yvonne said. "Lynette's idea."

"And how do we get her to take our call?" Jay said.

Davenport turned the cold cigar in his fingers.

"Mabinti M'Beke comes from Gambalia," he said, looking at the curtain, not at them. "I was there with the Army. A man in a mask came into her village. He shot her husband. He shot her little girl. Mabinti pulled the mask off his face before he hit her. When she woke up, I was carrying her to a truck, and all she had left was her daughter's doll. She wouldn't let the medics take it." He put the cigar back. "We've kept in touch. She'll listen to me."

Somebody knocked on the door.

Rashid shut the laptop. Davenport moved between the door and the bed.

"C'est moi," said Pierre. "Mon beau-frère est là." (It's me. My brother-in-law is here.)

Leclercq came in and shut the door. "I followed you from Le Bourget this morning, Davenport. The President told me to, herself. I sat in my car across the street for two hours, to see who else came. Nobody came." He looked at each of them. "Tonight at eight I see my

chief, and I tell him where you are. I told the President the truth, and I will not start lying now. So before eight, you decide what he will hear.”

“We’re bringing in the Secretary-General of the United Nations,” Jay said. “If she comes, we show her the machine. Then, with her beside us, we show the world. From the Eiffel Tower.”

“Not here,” Leclercq said. “Use our flat. The police searched it the afternoon you left. Six officers, four hours. Nobody searches the same flat twice. It was Lynette’s idea. Again.”

Davenport dialled from the window. “Mabinti? It’s Horatio.” He listened. “I know. The bastard will always deny it. And now that he runs the country, he’ll never pay for it. The Russians and the Chinese keep him there. They want what’s under his ground.”

Rashid typed one word on the laptop for Jay to read: *Neodymium*. And under it: *The metal for the magnets in every phone and electric car.*

“I may have found a way to prove what he did that day,” Davenport said. “It’s not a camera. It pulls out the pictures an object saw. Any object that was there.” He closed his eyes. “You still have her doll. The doll was there.”

A long silence. Yvonne’s hand found Jay’s.

“Would you meet me in Paris? I’ll bring you to a safe place.” He hung up. “She’s coming.”

Scene 85

From the thirty-eighth floor of the United Nations building in New York, the East River was grey in the first light. Mabinti M'Beke sat at her desk with the phone in her hand. She was tall and thin, with short grey hair, in a long dress in the orange and green of Gambalia, and a small gold cross on a chain at her neck.

On the wall behind her hung one old photograph: a young woman in a refugee camp with a bandage round her head, and beside her a young American soldier with a sunburnt neck.

She typed a name. N'Gula Agimbi S'alo. A man in a white uniform with gold on the shoulders on a parade stand, under the caption *Perpetual Supreme Ruler of Gambalia*, with a row of Russian and Chinese officers beside him. Under Gambalia's ground lay one of the biggest deposits of neodymium in the world. Russia and China bought it, and they kept him where he was. No court in the world had ever reached him.

The face was older and fatter. But it was the face under the mask.

That day he had shot her husband in the doorway and her daughter in the yard. Then he had tried to abuse her. She had fought him and torn the mask off, and he had hit her until she fell.

Every year I tell the world what he did, she thought. And every year he is still up there on the parade stand.

She took a small cloth doll out of the brown leather bag that went everywhere with her: a faded yellow dress, one button eye, and a dark brown stain over half of the dress. She held it in both hands and cried without making a sound.

Then she put it back and pressed the button on her phone.

"Rosa. Please come in. We have to plan a trip to France."

Scene 87

A week later, at a quarter to eight in the evening, Mabinti M'Beke opened the door of her hotel suite in Paris in trousers, a dark jacket, a hat and dark glasses, and hugged Davenport for a long time.

"The French President said yes in one day," she said. "I have never seen a government move so fast."

"At ten that night I was in her office," Davenport said. "With Capitaine Leclercq beside me, which I never thought I would say. I told her the truth: that the only way to stop men with rifles shooting at each other in her streets is to let the whole world see the thing they are shooting about. She said yes before I had finished. Yes to your visit, to the tower, and nobody touches us until it's done."

"Nothing can make N'Gula pay," Mabinti said. "Nothing brings back my husband or my daughter. But the world can see what he is."

She called her head of security, Henley, a quiet grey-haired Englishman. "I wish to visit an old friend in the city. A plain car at the back door. No security team. You may drive me yourself."

"But, Madam Secretary-General —"

"No buts, Mr Henley."

In the Leclercqs' living room the pack sat open on the coffee table. The Leclercqs were at the theatre, so that Leclercq could say he had not been home.

"It looks like something a child made for the school science fair," Mabinti said, bending over it. "Are you sure this contraption can bring back the past?"

"Have I ever let you down?" Davenport said.

"Never." She touched the bag on her shoulder. "What do you need?"

"Your daughter's doll. You'll see all of it again."

"I'm ready."

She set the doll on the table. Rashid turned off the lights. The rope of colour touched the doll, and the dark room appeared in the air: five people standing in it, one with her hands over her mouth.

"Holy baby Jesus," Mabinti said, and sat down slowly. She gave Jay a day, a month and a year.

The picture blurred. Most of what the doll had seen was the dark inside a bag. Then the sound came back, and it was deafening. Screams. Shots. Machine guns.

The picture spun. The doll was in a small running hand, and a woman's hand was pulling the child along. A shot. The picture fell and stopped: dust, and a piece of sky.

"Stop! Please!"

After a few minutes Mabinti wiped her face. "He shot her there, in the yard. Then he came for me. Go on. Maybe the doll saw his face."

"There's a better way," Jay said. "You'll be inside the picture. Everybody hold hands. Don't walk."

The yard burst open round them. They stood in the dust at the height of the doll. The wall of a hut rose like a cliff. A roof burned at the top of the sky. Beside their feet lay a small open hand in the dust, very still.

Mabinti's fingers closed hard on Jay's.

A man in a black mask stood over them, as tall as a building, with a rifle. A young woman ran into the yard, screaming. Mabinti, younger, in an orange dress. She threw herself at him, caught the mask and tore it off.

Under it was a young face with old scars on both cheeks.

"N'Gula," Mabinti said.

He hit the young woman with the butt of his rifle. She fell in the dust beside the doll, her face as big as a door. He bent over her and pulled at her dress.

"No more!"

Jay stopped.

"Can this be recorded?" Mabinti said, in a calm voice.

"It's being recorded now. Rashid's laptop is filming, and so are our phones. Cameras outside can see the globe." Jay wound back to the moment the mask came off and turned the world with his hand until the face filled the space in front of them.

"Go on," Mabinti said.

A burst of machine-gun fire tore the air. N'Gula jerked his head up. An army truck came through the smoke, and a soldier jumped down from the back, firing as he landed.

Young Davenport: black-haired, with both arms working. The old Davenport said nothing. His hand closed tight on Yvonne's.

N'Gula ran and jumped into an armoured car, and it disappeared into the trees.

The young soldier carried the young woman towards the truck. Halfway there she woke and screamed. "My baby! Where is my baby?"

She fought free and ran back. She knelt by the small hand and shook it, and shook it. The young soldier stood a few metres away with his rifle up, watching the trees, and gave her the time.

At last she took the doll out of her daughter's hand. Her face came down close to it and filled the whole top of the globe, enormous and wet with tears.

Jay froze it.

"They took him from his village when he was a little boy," Mabinti said, looking up at her own young face. "Rebels. They gave him a gun before he could read, and taught him to kill. He learned it well."

Scene 88

Rashid turned the lights on. Mabinti put the doll back in the leather bag and stood up.

"Where do we go from here?"

"Live from the Eiffel Tower, with you as the speaker," Davenport said. "With you standing next to it, nobody can call it a fake."

"Then we must show the world something big enough that nobody can call it a trick," Mabinti said. "Big enough that every country understands this machine belongs to all of us."

"We solve one of the great mysteries of history," Rashid said. "Live. Leonardo da Vinci died in France, at Amboise. After the Revolution his church was pulled down and the graves were lost. In 1863 a French inspector of fine arts, Arsène Houssaye, dug in the ruins and found a skeleton he said was Leonardo's. Nobody knows for sure."

"Houssaye kept a lock of whitish hair from those bones," Yvonne said, typing. "From the beard, he thought. It belongs to a collector in America now, and he has lent it to a small museum in Vinci, Leonardo's home town, to test its DNA. Leonardo had no children. But a father passes one piece of his DNA almost unchanged to his son, and that son to his son, only through the men. The researchers found living men from the line of his half-brother Domenico. If the hair carries the same piece, it is a da Vinci."

"The DNA can say it came from his family," Rashid said. "The machine can say it's him. A beard hair saw the last months of his life."

"Only his hands and his room," Jay said. "A hair on his chin looks away from his face."

"His hands are enough," Yvonne said. "Leonardo wrote with his left hand, backwards. If the hair shows a left hand writing backwards, the world will know whose hand it is."

"And how do we persuade the owner to lend it to us?" Mabinti said.

Davenport rolled the cold cigar to the other side of his mouth. "It's in a little museum in Italy. I'll go there and make them an offer."

"With whose money?" Hill said. "The Bureau won't pay for a hair."

"Dennis," Jay said. "He said to call him when we needed money, or lawyers, or a door that locks. And he told me once he wanted his name on something that lasts longer than software."

Scene 89

The taxi from Florence climbed the last bend between the olive trees, and the town of Vinci came into view on its hill: stone houses, a church tower, a small castle.

Davenport got out slowly. The cut over his eye from the prison had been closed with three paper strips by a pharmacist in Florence, and his arm was still in its sling.

In the taxi he had called Dennis Laurent.

"You want me to pay for a hair," Dennis said.

"To borrow it. For one week. Live on television, from Paris, with the United Nations watching. After that nobody can steal the machine in the dark, because the whole world has seen it."

There was a long silence on the line, long enough for the taxi to climb two bends between the olive trees.

"Eighteen years ago I waited four hours in a lobby in California for a man who did not come down," Dennis said at last. "I have been angry about it every day since. I think I would like to stop." A breath. "Up to three million euros. Straight to the museum. And Monsieur Davenport. My name is not on it. Put Sakamoto's."

The museum was a narrow stone house in a lane below the castle. Its director was a small man of about sixty with a grey beard and round glasses, and the face of somebody who had been told to be polite.

"Please, Signore (Sir). This morning the Ministry of Culture in Rome told me to receive you. I am told the Secretary-General of the United Nations herself spoke to the minister. What is the nature of your visit?"

"The lock of hair."

The director's hands went still on the desk. "The tests on the DNA are not finished. And even when they are, very serious experts will say: maybe the bones were not his, maybe the hair is not from those bones. So many owners, Signore. People always doubt."

"I want to give you proof that nobody can doubt. Il Maestro (the Master) in person."

The director laughed. Then he saw Davenport's face and stopped.

"There's a new technique. It gets more out of one hair than any DNA test. It stays secret until the day it's shown to the world. What if the Secretary-General of the United Nations showed it to the whole world, live, from the top of the Eiffel Tower, using your lock of hair?"

"Ma questo è pazzo," the director said quietly, to himself.

Davenport did not speak Italian, but he understood that much. *This man is crazy.*

“The hair has no price, Signore.”

“Then put one on it. For one week.”

The director pulled a notepad towards him, wrote a number, tore off the page and slid it across the desk, the way a man throws a stone to frighten away a dog.

Two million euros.

Davenport did not blink.

“Can I give you a cheque,” he said, “or do you take credit cards?”

Scene 90

The morning after Mabinti's visit, on the President's order, two cars with no markings had moved them all to the air base outside Paris: four rooms at the end of one corridor, a gendarme at each end, meals on trays. On the third evening a blue gendarmerie car came through the gate, and Davenport climbed out with a grey metal box pressed to his chest.

They were all waiting in the common room: Jay, Yvonne, Rashid with his laptop, Mabinti in a borrowed grey cardigan, and Leclercq by the window.

"So?" they said, all at once.

Davenport broke the band of red wax across the catch with his thumb and lifted the lid. In grey foam lay a small oval frame of dark metal, and behind its glass, on faded cream silk, a lock of white hair tied in the middle with a thread.

Yvonne put on white cotton gloves and lifted it to the lamp. "Nineteenth-century frame. Little bubbles in the glass." Jay had never seen her hands shake before.

"After what Dennis Laurent just paid to borrow it, it had better be his," Davenport said. "Two million euros, for one week. The week started this morning. And the card on the museum's wall says it was lent by the Sakamoto Foundation, which did not exist until yesterday."

"And Belenko?" Mabinti asked.

"His face is at every station, every airport and every border," Leclercq said. "He has a pistol, cash, and nothing left to lose. Colonel Kushnir flew home the morning after the prison. His embassy says he was never in France." He looked at the window. "Men like that do not go home. Men like that wait."

"My office in New York has been told I have a fever," Mabinti said. "I have never been so ill and felt so well."

Mabinti's leather bag sat on the chair beside her, with the doll inside it. She had not let it out of her sight since Paris.

"We try the hair first," Jay said. "Tonight. Before anybody watches. Lincoln's hair was black for more than a century and a half, the inside of an envelope and a drawer. This one lay in a grave and then in boxes for five hundred years. I won't make the whole world watch the inside of a box for an hour. And the glass comes off. The beam reads the first thing it touches."

"Then I open it," Yvonne said. "Not you."

"Five centimetres," Rashid said, with a ruler against the glass. "A beard grows about a centimetre a month, white hair maybe faster. So it started growing two to five months before he died. When this hair started to grow, he was already dying."

“And if he looked at his paintings even once,” Yvonne said, “we’ll see them the way they really were. Before the varnish went yellow.”

Jay put on the pack. “Is there an empty hangar on this base, Captain?”

Scene 9!

The hangar was big enough for two aircraft and held nothing. One row of lights burned high in the roof. In the middle of the bare concrete stood a folding table, two lamps, five plastic chairs and two cameras on tripods.

Yvonne sat at the table in her white cotton gloves, lifting the four tiny nails out of the back of the frame one at a time with the thin blade of a screwdriver.

"When the world watches this," Mabinti said, "there will be no second take."

"Everything we see tonight, I record," Rashid said. "If the live picture fails, we have a copy."

"I have looked at his paintings since I was a student," Yvonne said. "And in an hour I will see his room. It is like a blind date with Leonardo da Vinci."

"With a man nobody knows," Rashid said. "Thousands of pages of notes. Water, birds, machines, corpses. Not one line about who he loved."

"He kept the Mona Lisa for more than ten years," Yvonne said. "He never gave it to the man who ordered it. He carried it all the way to France and was still painting it there. A year and a half before he died, a churchman visited him at Amboise and wrote it in his diary: Leonardo's right hand was paralysed. He could not paint any more, but he could still draw and teach."

"He was left-handed," Rashid said. "Why would a bad right hand stop him painting?"

"Nobody knows. Some think he painted with both hands. Some think the churchman got it wrong."

"Then we'll see," Jay said.

Mabinti turned in her chair. "When the world asks who has seen this machine work, Dr Davies, who will answer? Besides the four of you, and a policeman who works for France?"

"Dr Hill," Jay said. Then he stopped. "He doesn't know where we are. Our phones have been off for days. He brought me to Paris. I'm not doing this without him."

"Your phone tells anybody watching the nearest cell tower that you are on this base," Leclercq said, and took out his own. "And the President's office must know first. She says nobody moves the machine, the scientists or Madame without her office knowing. She has also decided she will stand beside Madame on the tower, in front of the world. If the world watches this, she wants it to watch it from Paris, with France beside her." He walked away, made a call, and came back. "A car will fetch him. Do not say where we are."

Jay dialled from memory. "It's me."

A long silence. "Jay. Where the hell have you been, son?"

"A car's coming for you. Get in it. We're going to read Leonardo da Vinci's hair tonight."

"Then tell them to bring somebody who can carry me down six floors."

An hour later Hill came in slowly with a young gendarme at his elbow and his plastic bag in his hand. Jay crossed the hangar at a run and stopped just short of him.

"Careful, son. They sewed me up once already."

Jay hugged him anyway, gently.

Hill looked past him at the tall woman in the grey cardigan. "That's the Secretary-General of the United Nations. In an aircraft hangar."

"It's a long story."

"Good evening, Professor," Mabinti said.

Hill stood up straighter, one hand on his stomach, and bowed his head to her. "Madame Secretary-General. Forgive an old man with stitches if he sits down now."

Jay told him the rest while Yvonne lifted the last nail: the prison, the sewer, Lynette's garbure, the launderette, and the clock that still ticked every day on Rashid's computers in eleven countries.

Hill listened to the end. "A recipe you never send is still a gun, son," he said quietly. "You've just promised not to fire it. I hope you never have to."

"So do I, Jeff."

Yvonne took the old glass off the frame. Under the lamp, on its faded silk, the lock of white hair lay uncovered for the first time in more than a hundred years.

"Only the people touching me go in," Jay said. "Leclercq stays outside with the cameras."

"Somebody from France must see it with his own eyes," Leclercq said. "From outside."

Yvonne took Jay's hand. Hill put a hand on his shoulder, Rashid the other. Mabinti laid her fingers on his sleeve. Davenport put his big good hand flat on Jay's back.

The beam touched the white hair. Jay wound the picture forward out of the dark, spread it wider than his arms, and pressed 3D.

They stood in a forest of white stalks, each as thick as a tree. The ground under their feet was linen, and it rose and fell, slowly.

"His chest," Yvonne whispered. "He is breathing."

Beyond the white trunks lay a long slope of dark red blanket, and on it two enormous hands. The right hand lay still, the fingers bent stiff towards the palm, like a claw. The left hand held a stick of red chalk, and under it, on a board across his knees, was a drawing of water, pouring and curling. A flood.

"The churchman was right," Rashid said. "The right hand doesn't move."

"And the left one is still drawing," Yvonne said. Her voice shook.

Beyond the end of the bed, on a wooden chest against the wall, leaning without a frame, was a painting of a woman with her hands folded.

Nobody spoke.

The sky behind her was blue and green. Her sleeves were the warm colour of honey, and her skin was pink and alive.

"Mon Dieu," Yvonne said. (My God.) "Look at the colours. They were never brown. It is the varnish. He kept her at the end of his bed. He looked at her every day."

A heavy woman in an apron came in with a bowl, and a voice above them spoke, very close and very deep, in Italian.

"Grazie, Maturina." (Thank you, Maturina.)

The ground shook as he spoke.

"That is his voice," Yvonne said. "In his will he left a dress to his cook, Maturina. She is real."

A young man with long fair hair took the board and the chalk off the bed. "Francesco Melzi," Yvonne whispered. "His pupil. He stayed with him to the end."

A thin servant came with a comb and a small round mirror, and held the mirror up in front of the old man's chest.

In the glass, looking down at them, was a face.

Long white hair to his shoulders. The white beard spread down over his chest, and they were standing in it. A long straight nose, heavy white brows. The eyes were pale, tired, and still sharp.

"It is him," Yvonne said. She could hardly speak. "Nobody has seen this face for five hundred years. Only drawings, and nobody even agrees that the drawings are of him."

"Recording," Rashid said quietly. "Every second."

In the mirror the old man's lips moved. "Vecchio."

"Old," Yvonne whispered. "He said, old."

"Go to the end," Rashid said. "The second of May. Every book says the King of France was there and Leonardo died in his arms. A historian wrote it thirty years later, and he wasn't there. And there's a royal paper signed the next day two hundred kilometres away."

Jay turned the wheel. Day, night, day, night. Grey morning light. He stopped.

The room was full. A priest in black stood at the side of the bed reading Latin. The cook was crying into her apron. The ground under their feet rose, and fell, and then waited a long time before it rose again.

The world tipped. Leonardo's head had fallen back against the pillow, and a young face came down over them, so close that it filled the sky, fair and wet with tears. Melzi slid his arm under the old man's head and held it.

The deep voice spoke again, slowly, with a breath between the words.

"Ho offeso Dio e gli uomini... perché non ho lavorato nell'arte come dovevo."

"I have offended God and mankind," Yvonne whispered, "because I did not work at my art as I should have."

"He died thinking he hadn't done enough," Hill said.

The ground rose once more. It fell. It did not rise again.

Melzi bent until his forehead touched the old man's, and stayed there.

Yvonne looked at the door of the room. It stayed shut. Nobody came through it. There was no king.

"Enough, chéri," she said. "Stop."

The hangar came back. Leclercq was standing by the cameras, rubbing his face with both hands. Mabinti's face was wet.

"That's twice," Hill said. "Lincoln, and now him. I don't want to watch a third man die, son."

"Every book says the king held him," Yvonne said. "Every painting. I learned it at school. He died with the young man he taught, and his cook, and a priest."

"And the hair is his," Rashid said. "Nobody can argue with that now."

Then Rashid picked up the notepad, wrote two words in capitals, and turned it round.

"People say the Mona Lisa was really his pupil Salaì, the little devil who lived with him for thirty years and stole from him. Move the letters of MONA LISA around and you get MON SALAI. My Salai."

Yvonne stared at the two words. Then, for the first time that night, she laughed.

Scene 92

In Amanda Gladwell's hotel suite near the Opéra the television showed the Arc de Triomphe under police tape for the fourth time that afternoon. She had landed that morning. She had not slept on the plane.

Marvin Caswell stood in the doorway. He had not shaved for days, and his raincoat was buttoned one button wrong.

"Sit down, Marvin."

He sat on the edge of the sofa. He did not take his coat off.

"On the phone you said there was more at stake than I could imagine. So tell me. All of it. And if you lie to me once, I will know, and you will never work in a laboratory again on this planet."

Caswell turned his university ring once round his finger. Then he told her. The smoke detector. The baby's shoe. Lincoln. The spiral of blue points and the twisted ladders that nobody on Earth had made. And a grey screen with a green line on it, and a number at the bottom.

"Eleven seconds," he said. "A warm qubit. In your reactor. With your gas. On a Sunday."

Amanda did not move for a long time.

"And you sold it," she said at last. "To the man with the purple face."

"I was going to tell you. When I knew what it was worth."

"You knew exactly what it was worth. You've been waiting thirty years for that number." She stood up and went to the window. "And Davies?"

"He burned the sample. I watched him do it, on the camera. And the recipe, and the logs." Caswell looked at his hands. "It's still in the ball. He can grow it again whenever he likes. The French have him now. Or they did. Nobody knows where he is."

On the television the picture changed. A woman in orange and green, with short grey hair, at a lectern in New York. A line of text under her: *UN Secretary-General to make appeal for peace from the Eiffel Tower, Thursday, 8 p.m.*

Amanda watched it with her arms folded.

"Peace," she said. "From the Eiffel Tower. Two weeks after a gun battle at the Arc de Triomphe, and ten days after a prison with its gate blown in. And the French President beside her." She turned round. "Where Davies is, that bag is. And where that bag is, there are cameras now. That's where he'll be, Marvin. With the whole world watching him give my property away."

"You can't stop a broadcast."

"No. But the ambassador can put a name on a guest list. Gladwell has sold to his government for twenty years." She picked up her phone. "You fly home tomorrow. You go back to your laboratory. You talk to nobody. Not the FBI, not the French, not your wife. When I go to court for that machine, you are my witness. You saw it work, in my building, on your own camera."

When he had gone, she sat for a long time at the desk.

Then she opened her handbag and took out a small gold tube that looked like a lipstick. It had stood for thirty years in a glass case in her father's study, between a mine lamp and a silver hip flask. Ray Gladwell had bought it from a collector, and liked to show it to visitors after dinner. *The Russians made these for their spies*, he used to say. *One shot. For when there's no way out.*

She had put it in her handbag the morning of the funeral and never taken it out again.

She turned it over in her fingers, and put it back.

Scene 93

The last window went dark at three in the afternoon. A carpenter lifted a sheet of plywood into the frame and drove in the screws, and the grey river and the roofs of Paris were gone.

The restaurant on the first floor of the Eiffel Tower was empty, its tables stacked against one wall with their legs in the air. Fifty-seven metres below, three television trucks stood between the tower's legs.

"Why the wood?" Jay asked.

"Because the President will stand in this room tomorrow," Leclercq said. "From across the river a man with a rifle can see every window on this floor. If he cannot see in, he cannot shoot."

Rashid knelt on the carpet with a roll of yellow tape while Yvonne held the end of a tape measure on a small black cross at the centre. He walked round her and laid a yellow circle as wide as the room was deep.

"Me," Jay said, when Mabinti asked what it was for. "When I press 3D, the globe opens eight metres across. Anybody inside that line has to be holding a hand, or the globe pushes them out against a wall they can't see. People fall, and somebody shouts 'bomb'."

"Then I will ask them to hold hands before the music starts," Mabinti said. "The President. The ambassadors. Whoever stands near me."

"And the cameras stay outside the line," Rashid said. "Nothing passes through the edge of the globe, but from outside you can see everything in it. And inside, no radio. Nobody can phone or send anything."

"So the President cannot telephone anybody while she is in there," Mabinti said.

"Nobody can."

Out on the walkway, behind the one door that was not boarded, a grey case the size of a small suitcase stood open with its flat lid facing south. "A spare," Rashid said. "Reporters take these into deserts and wars. It sends live pictures straight up to a satellite on its own battery. If the trucks fail, we are still on the air. The television satellites sit high over the equator. From Paris, the equator is south."

On his laptop Mabinti's office had announced it to the world: the Secretary-General, recovered from her fever, would make an appeal for peace from the Eiffel Tower tomorrow at eight in the evening. Rashid had spent the morning making sure every news site on Earth had it.

Leclercq handed out badges on blue cords, each with a first name, the word MUSICIEN (musician) and a stamp from the President's office. "The gendarmes at the door know who you are. The badges are for everybody else. 'The musicians' is an answer nobody writes about."

"The programme says a string quartet," Mabinti said. "It will be the shortest concert in history."

"Tomorrow night the whole world knows, son," Hill said. "After that you can't put it back in the box."

"I know."

"Good. I wanted to hear you say it."

"Washington knows the Secretary-General will speak, with the French President beside her," Davenport said. "That's all Washington knows."

"The Russian and the Chinese ambassadors have accepted my invitation," said Mabinti.

"If anything goes wrong in this room," Leclercq said, "my orders are simple. I cut the power. Every light, every camera. Nobody on Earth watches a disaster live from Paris." He opened a cardboard box: two black vests. "For you, Dr Davies. And Monsieur Davenport. You stand closest to her."

"And a gun to go with it?"

"In France only the police carry guns."

"You keep telling me."

At seven that evening a young man in a black fleece came out from between the tower's legs with a tool case.

Maksym had watched the trucks since noon from a bench across the river. His head was shaved. Ten days of beard covered his jaw and the four scratches on his cheek, and he wore cheap glasses from a pharmacy. That morning, on a television in a kebab shop, he had seen Madame M'Beke's photograph and the words EIFFEL TOWER, TOMORROW, 8 P.M.

Where she is, the machine is, he thought.

He followed the young man to a green door four metro stops away and walked in behind him with the pistol in his back. The badge on the fleece said THÉO. He laid cables for the cameras.

"Tomorrow you are sick," Maksym said, and laid a Belgian identity card on the table. A shaved head and a beard that looked enough like his in bad light. It had cost him the last three thousand euros he had, from a man at a car wash who did not ask his name. "Your cousin from Brussels takes your place. He knows cables."

Théo called his supervisor with the pistol behind his ear. The supervisor swore, then sighed. "The list closes at nine. Spell it." The broadcast was in twenty-four hours, and he had nobody else.

“They X-ray every case,” Théo said. “Yesterday a gendarme opened mine because of a screwdriver.”

Maksym looked at the pistol a long time and put it back in his jacket. Tomorrow he would go in with nothing but his hands.

He taped Théo’s wrists, ankles and mouth and sat him in the bath. “Your friends come looking in two days. You will be thirsty. You will not be dead.”

At the window the tower stood over the roofs, lit gold. He found Maria’s name on his phone and looked at it for a long time. He did not call.

At nine the tower began to sparkle, as it does every hour after dark, and Maksym watched it until it stopped.

Scene 94

At eight o'clock the television lights came on, and Mabinti M'Beke stepped into them.

She wore a long dress in the orange and green of Gambalia, with a headscarf of the same cloth, and the small gold cross at her throat on its knotted chain. Beside her stood President Marie Dubois in a navy suit, a gold earring in each ear, and one step behind the President her bodyguard, a broad man with a wire curling into his ear.

Beyond the yellow line sat the guests: ambassadors, ministers, two film stars, a hundred journalists. Behind them the cameras. By the one door that was not boarded, Rashid sat on a stool with his laptop on his knees, its little camera looking straight at the yellow circle. Outside on the walkway the grey satellite case pointed its lid at the south.

At the end of the front row sat a short, stocky man with thick glasses and a beard, with a white cardboard box on his knees that he had not opened. Dennis Laurent had paid two million euros for the lock of hair on the little stand behind the curtain, and had asked for nothing in return except a chair.

Behind a black curtain, on the small black cross at the centre of the circle, Jay stood with the pack on his back and the white hair on a little stand behind him in its open frame. The beam was already on, and a picture the size of a window hung in the air in front of him, waiting. His vest hung over the back of Hill's chair; it would not go on under the straps of the pack. Yvonne stood at his shoulder with her hand flat on his back. Hill sat beside them with his MUSICIEN badge on its cord.

Davenport stood at the edge of the circle, close to Mabinti, with the vest under his jacket.

Near the second camera, a cable man in a black fleece knelt and checked a plug. A shaved head, a short beard, cheap glasses, a badge with a Belgian name.

"Citizens of the world," Mabinti said.

The room went quiet. Her voice was deep and did not need the microphone.

"In the last weeks this beautiful city has seen violence. Men with rifles attacked a prison. Men died in a square by the Arc de Triomphe. I am here tonight to ask for peace. We have walked on the moon. We have beaten diseases that killed our grandparents. And every year we spend more on weapons, and use them on each other."

The applause started at the back and ran forward. She raised a hand.

"Before I go on, I want us to listen together to a piece of music, composed for this evening by an unknown master. His name was Natoshi Sakamoto." Journalists looked at each other. "Please. Everybody inside the yellow line, take the hand of the person beside you."

The President took Mabinti's right hand without a word. The ambassadors took hands, a little stiffly, like people at a wedding. Davenport took the hand of a Chinese diplomat with his good one.

The cable man put down his plug. He stood up, stepped over the yellow line as if somebody had waved him in, and took the bodyguard's left hand. The bodyguard glanced at the fleece and the badge, and looked away.

"And now," Mabinti said, "the Temporals String Quartet."

She pulled the cord, and the black curtain slid open.

There was no quartet. There was a young man with a backpack, a tall French woman with her hand on his back, and an old man on a chair. And in front of them, in the air, hung a picture of a bed in a dark room with a beamed ceiling. An old man with long white hair lay in it, and a young man with fair hair held his head.

A woman in the second row said, "Oh."

Mabinti walked to Jay and held out her left hand. He took it.

The globe opened with a sound like a big breath.

For the people in the chain, the restaurant was gone. They stood on a white plain that rose and fell, slowly, under their feet: the sheet on Leonardo's bed, rising and falling with his breathing. Above them was a sky of wooden beams. On one side lay a mountain of dark red blanket. On the other, so close they could have touched it, a young man's face as big as a house, wet with tears.

The President's hand closed hard on Mabinti's. An ambassador sat down on the floor.

"Don't walk," Jay said. "Hold on to each other. The room is still here."

From outside, the guests saw a ball of light eight metres wide, and inside it the room of 1519, and standing in that room the President of France and the Secretary-General of the United Nations, holding hands. Nobody screamed. The journalists rose slowly from their chairs, one row after another, as if they were in church. The famous actor crossed himself.

By the door, Leclercq stood with his radio at his side and did not lift it.

In the trucks at the foot of the tower the picture went out to the world.

The old man's lips moved, and his deep, tired voice filled the sky.

"Ho offeso Dio e gli uomini... perché non ho lavorato nell'arte come dovevo."

"I have offended God and mankind," Mabinti said quietly, "because I did not work at my art as I should have." She raised her voice. "What you see is not a film. It is not made on a computer. You all know me. I would not put my name to a trick. This is the second of May, fifteen hundred and nineteen, and that is Leonardo da Vinci on the day he died. We are seeing it through a lock of his own hair. The machine that does this was not made by anybody on Earth. It came out of the sky inside a metal shell. It is the first proof that we are not alone in the..."

“Stop!”

The cable man still had the bodyguard’s hand. He twisted it back, hard, until the big man dropped to his knees, and pulled the pistol from the holster on his belt. He pointed it at Mabinti.

Under the shaved head and the beard, down the left cheek, ran four thin pale lines. Jay knew them. Erwin’s.

“You,” Mabinti said.

“Nobody tells the world,” Maksym said. “The machine is mine.”

Davenport moved before anybody else. He threw himself across the gap between them.

The shot was very loud.

It hit Davenport in the middle of the chest and knocked him backwards onto the white plain. He landed on his bad shoulder and made a sound Jay had never heard a man make.

Outside the globe, the guests saw a man with a gun in a room five hundred years old, a big American falling, and the Secretary-General of the United Nations with a pistol pointed at her face.

A woman screamed. Then everybody did.

“Il a une arme!” (He has a gun!)

The rows broke for the stairs. Chairs went over. A tripod fell, and its camera swung on its cable and stared at the ceiling.

“Coupez le courant!” Leclercq shouted into his radio. (Cut the power!)

The lights went out. The cameras went dark. In the trucks, every screen went black.

The globe did not go out. It hung in the dark room, glowing, and the people on the stairs stopped and stared at it.

On Rashid’s knees the laptop still glowed too, on its own full battery. Its picture still went down a cable to the grey case on the walkway and up to a satellite over the equator. A small red dot said LIVE: Mabinti in Leonardo’s bedroom, and a gun pointed at her face.

Rashid reached through the door and slapped the lid of the satellite case shut. The red dot went out.

Maksym swung the pistol to Jay. “The machine. Give it to me.”

Jay did not answer. He reached behind him with his free hand and pushed the stand with the hair.

The world turned over. The bed, the beams, the young man’s face, the whole room of 1519 tilted and swung like a ship in a storm. Every eye said the floor was falling away, and every

body believed it. The ambassadors went down. The President went down with Mabinti on top of her. Maksym staggered sideways with the pistol waving at the sky.

Davenport did not believe his eyes. He had stood in the globe before, in a yard in Gambalia and in Leonardo's room. He knew the floor under him was flat, and he came up off it with his good arm already reaching.

His left hand closed on Maksym's wrist.

They went down together, rolling, the pistol between their bodies. Maksym's thumb dug into the strapped shoulder. Davenport roared and did not let go. He forced the wrist round, an inch at a time.

The second shot was muffled, the gun pressed tight between them.

Maksym's eyes opened very wide. He looked down at his own chest, at the gun in his own hand. Then his head fell back onto the white plain, under the beams of a room five hundred years old.

Jay pressed QUIT 3D, and the globe was gone.

The restaurant was dark, lit only by the green exit signs and the glow of Rashid's laptop. Maksym lay inside the yellow circle with his eyes open. Davenport lay beside him, tearing at the straps of his vest.

Two men in dark suits lifted the President off the floor by both arms and ran her to the service lift. Two more took Mabinti the same way. She twisted round in their hands. "Jay!" The lift doors closed on her face.

Then police everywhere, helmets, guns up. "Personne ne bouge!" (Nobody move!)

Scene 95

Everybody froze. Except one woman in the American ambassador's row, in a dark suit, with a silk scarf over her hair. She took off her dark glasses, took something small and gold out of her handbag that looked like a lipstick, and pointed it at Jay.

"Davies! You bastard!"

"Mrs Gladwell?"

"The ambassador found a seat for a company that has sold to his government for twenty years." Her voice cracked. "You stole my property! You grew it in my reactor, with my gas, and you burned it rather than give it to me!"

"It isn't yours. I found it in a thrift store."

"It came out of my laboratory! My money! My technology!"

The lipstick was a pistol with one shot in it. On the X-ray at the door it had looked like a lipstick.

"Then it belongs to nobody," Amanda said.

Yvonne stepped in front of Jay.

The lipstick made a small flat crack.

Yvonne looked down. A dark spot grew on her blouse, over her heart, and spread.

"No," Jay said. "No. Not her."

Leclercq hit Amanda from the side and took her down between two chairs.

Jay caught Yvonne as her knees went, and went down with her, and held her head in his hands on the white carpet of a restaurant fifty-seven metres above Paris.

"Jay..." Her breath caught. "Mon amour (My love). I love you. Don't..."

Her head went heavy in his hands. Her eyes stayed open. They did not see him.

For one second the world stopped, the way it had stopped on a porch step when he was twelve.

Then something older and faster than Jay took the controls, and this time it did not tell him to run.

"Rashid," he said. "The key."

Rashid was already there, on his knees on her other side, with the pack pulled round and open. He did not ask anything. He touched the small button of light. Red letters stood up in the dark: WARNING: EXTREME DANGER. PROVIDE BIOMETRIC INFORMATION.

Rashid pressed his forefinger to the square, and held his eye to the line of light. STAGE ONE.

Jay took his hands off Yvonne's face, and they were red, and he put his finger on the square and his eye to the light.

Green. Green.

TEMPORAL ENTANGLEMENT.

"Doctor," Rashid said. His voice shook. "Only those inside remember."

"I know." Jay pressed it.

A low hum filled the restaurant, and climbed. The air bent round the sphere, so that the boarded windows and the green exit signs swelled and curved. Then a beam came out of it that was not a colour at all. It was black.

He aimed it at the black curtain on its frame behind the yellow circle, the curtain that had seen everything, and wound back a little more than a minute. Then he looked at Rashid and held out his free hand.

"Nobody alone," he said.

Rashid took it. Jay pressed 3D.

The globe that opened was black. It did not push anybody. It bent round the table and the chairs and the people like a soap bubble round a straw, and closed.

Inside, the restaurant was back, at full size, solid, silent and frozen in the green light of the exit signs. Amanda stood in the ambassador's row with her arm out and the lipstick in her hand. Yvonne was frozen in mid-step in front of Jay, her hair lifted. Behind her stood a second Jay, frozen with his mouth open on a word he had not said yet.

"Don't move," Rashid whispered. "Here, everything is real."

Jay turned the wheel to half speed. The frozen room began to move, slowly, as if through deep water. Amanda's thumb crept down towards the end of the gold tube. Yvonne's foot came down, slowly, towards the carpet.

Jay walked into it.

It was like walking through mud up to the chest. Every step cost him everything his legs had. He did not look at Yvonne. He looked at the hand with the lipstick, and went for it, and the room fought him like a river, and he heard himself shouting with no sound at all.

He reached Amanda as her thumb touched the end of the tube. He got both hands under her wrist and pushed, up, with all of his weight and all of his thirty-two years and every morning he had ever run because of a porch step.

Her arm rose. Slowly. Too slowly. Higher.

The lipstick fired.

A spark flew from the iron beam in the ceiling, high over Yvonne's head.

Jay stumbled back and found the controls in the air, and pressed them, and the black globe was gone.

Yvonne was standing.

She stood in front of Jay with one hand on his arm, looking up at a bright new scratch on the iron beam overhead.

"That was close," she said. "Thank God she missed. Who is that woman? Why did she shoot at me?"

Jay could not speak. He put his arms round her and held her so hard that she said his name twice. Over her shoulder Rashid stood with his hand over his mouth, crying without a sound.

"Stop it. Both of you. She missed. Why are you crying?"

Hill came slowly across the carpet, holding his stomach, and put his arms round both of them, and held on.

On the floor Davenport got up on one elbow with the vest off. A flattened bullet sat in the cloth over his heart. "Everybody okay?"

"We are now," Jay said, and took Yvonne's hand, and did not let go of it.

Between two chairs Leclercq knelt on Amanda's back and snapped the handcuffs on. "In France only the police carry guns, madame. Even very rich Americans."

"Do you know who I am?"

"Yes, madame. Now I do."

A gendarme in a helmet came across the yellow circle towards Jay with his hand out. "La machine, monsieur. C'est une pièce à conviction." (The machine, Sir. It is evidence.)

Jay stepped back with the pack against his chest.

Leclercq's phone rang. He listened, standing up, with his knee still on Amanda's back and his other hand raised to stop the gendarme.

"Oui, madame," he said. "Oui. Tout de suite." (Yes, madam. Right away.)

He put the phone away.

"That was the President, from the bottom of the service lift," he said. "She was in that room of fifteen hundred and nineteen with her hand in the Secretary-General's, and she saw a man die, and she saw who stood in front of the gun. She says the machine is not evidence. She says the machine, and the people who can work it, are under the protection of the

United Nations from this minute, and that France is the first country to say so." He looked at the gendarme. "Lower your hand, son. That is an order from the only person in France who can give it."

The gendarme lowered his hand.

"And now," Leclercq said, "before somebody changes her mind, you are all coming with me."

"Then you need a car." Dennis stood in the doorway with his box of cakes under one arm and his glasses crooked. "Mine is at the foot of the tower. Armoured. And my driver knows every way out of Paris that the police do not watch."

Leclercq looked at him for a moment. "Monsieur Laurent. Of course."

Scene 96

The farmhouse belonged to Lynette's mother, an hour south-west of Paris, at the end of a lane between wheat fields, and Lynette's mother was ninety and deaf and asked no questions at all. She put a pot of soup on the stove, kissed her son-in-law on both cheeks, looked at the seven strangers in her kitchen, and went to bed.

The kitchen had a long wooden table, a stove that ticked as it cooled, and a small television on top of the fridge. On the screen: the frozen picture of Mabinti in the room of 1519, a pistol pointed at her face, and under it, SECRÉTAIRE GÉNÉRALE DE L'ONU : SAIN ET SAUVE. (The UN Secretary-General: safe and sound.) The gunman was dead. A woman had been arrested. In a studio a man in a bow tie said the deathbed was a hologram, and the woman beside him said nobody had ever made a hologram people could stand inside, and held up a folded graph and said one word: technetium.

Leclercq turned it off. At the far end of the table Dennis sat with his white box of cakes in front of him, unopened, and his hand flat on his chest, over the locket.

Yvonne found a first-aid box under the sink. Hill's scar had held, with one small spot of blood where the stairs had pulled it. Over Davenport's heart was a bruise the size and colour of a plum. He held a bag of frozen peas against his shoulder and closed his eyes. Then he reached into his jacket and laid a small oval frame of dark metal on the table, with a lock of white hair on faded cream silk.

"I took it off the stand while we waited," he said. "Dennis Laurent paid two million for that. It goes back to Vinci in a diplomatic bag on Monday. Nobody can open one or hold it back. Not customs, not the police."

"Mrs Gladwell shot at me," Yvonne said, frowning. "Her arm went up just before she fired. As if somebody pushed it. Nobody was near her."

"Somebody was," Jay said.

She looked at him. Then at Rashid, who was looking at the table.

Jay turned her chair so she faced him.

"She didn't miss, Yvonne. Not the first time. You died. On the carpet. In my hands."

Yvonne's face went white. "That is not funny, Jay."

"It is true, mademoiselle," Rashid said quietly. "I was inside with him. I remember it too. I am sorry."

"You're here because I went back one minute and pushed her arm."

Nobody in the kitchen moved. Even Leclercq, by the door, stopped turning his glasses in his fingers.

Yvonne put her hand flat on her blouse, over her heart. There was nothing there. She looked at Jay for a long time.

"Did I say something?" she said. "On the carpet."

"You said you loved me."

She held his face in both hands. "Then I say it again. I love you."

"I love you," Jay said. "I should have said it in the catacombs."

"Yes," she said. "You should."

Hill looked away, at the dark window, with his eyes very bright.

"It was bad enough when it only looked at the past," Davenport said after a while. "Now think what any government would do with it. Change history for their own benefit."

"And every change makes a new version," Jay said. "A small change can have big results that nobody can predict. I moved one wrist. I don't know what else I moved."

"We could stop wars," Rashid said. "Plagues. Famines."

"Change one war and you change every life that came after it," Yvonne said. "My grandparents might never meet. I might never be born."

"You were dead three hours ago, mademoiselle," Rashid said. "Now you are not. Was that wrong?"

Yvonne opened her mouth. Then she closed it.

"We have no right to decide the fate of mankind," Hill said.

"No," Jay said. "And neither has anybody else alone. That's the whole letter."

He put his hand on the pack. *Four ninety-nine to find out what it is*, his father had said.

"So here's my decision," he said. "And then you can all tell me I'm wrong."

"Natoshi asked for one thing. Scientists from every country, guarding it together, and nobody alone. After tonight Madame M'Beke can call them together, and nobody on Earth can say no to her. We give them the machine. The looking part, in the open, for everybody. And the encyclopedia, every page, for every scientist on Earth to read. The pages are too many for any one country anyway. It'll take all of them."

"And we give them the recipe for the diamond. Not to one country. To all of them, at the same table, on the same day. They decide together what to do with a computer that opens every lock. If they decide to throw away the locks and build better ones, they do it together. If they decide to wait, they wait together. Until that day the clock on Rashid's computers keeps ticking, and I press my button every morning."

"And the black beam?" Davenport said.

"We tell them the truth about it. Face to face, in a locked room. It stays behind two keys, Rashid's and mine, and neither of us opens it alone, and neither of us opens it unless they ask us to. Until they've understood everything it can do, and everything it can break, nobody changes one thing." He looked at Yvonne. "I've already changed one. That's my ration for a lifetime."

Nobody said anything for a long time. The stove ticked.

"Six weeks ago," Hill said at last, "you couldn't tell Amanda Gladwell your own number."

"Six weeks ago I didn't have anything worth deciding."

Hill looked at him across the table, the way he had looked at him in a lab when he had found an error on line three.

"Then decide it, son," he said. "We're with you."

One by one the others nodded. Dennis took off his glasses and rubbed his eyes. "I said you were wrong to trust a government," he said. "You found something better than a government. I am glad I was wrong." Leclercq nodded last, by the door.

"I will need to explain all of this to my chief," he said. "And to my wife, which is harder."

"There's only one problem," Jay said.

Everyone turned, expecting the worst.

"I miss Erwin."

Yvonne laughed first. Then Hill, then Rashid, and at last Davenport, holding his shoulder, and Leclercq, who did not know who Erwin was and laughed anyway.

Scene 97

Six weeks later, on a grey morning, twenty-four scientists from twenty-four countries walked down two floors under the Louvre into a room with no windows, and watched a coffee cup show them the factory it was made in.

Mabinti M'Beke had called them together the week after the tower. Nobody on Earth had been able to say no to her. They were physicists, historians, a judge, two doctors and a woman who studied the ethics of machines, and the room they met in had been a strongroom before it held them. The French guarded the door, and the United Nations guarded the French.

In a locked room, face to face, Jay and Rashid told them about the black beam. Nobody wrote anything down. The Council's first rule, voted that afternoon, was the one Natoshi had written: look first. The second was that the two words behind the lock would stay dark until all twenty-four of them agreed otherwise. They did not agree. Not that year.

On the third day Jay gave them the recipe for the diamond, twelve pages, the same pages to all twenty-four at the same moment, and on his phone the clock on Rashid's computers stopped for good. The Council argued for nine days. Then it voted its third rule. Before a single diamond was grown anywhere, every country would move its secrets to new kinds of locks that no quantum computer could open. Mathematicians had known how to build such locks for years. Nobody had bothered, because nobody had believed the warm computer was coming so soon. It took the world two years. Only then did the recipe go out, to every laboratory on Earth on the same morning, and nobody's secrets died.

Natoshi Sakamoto's name went at the top of their first report. Not at the end of the table. At the top.

In the second week the Council opened Natoshi's encyclopedia.

They read it the way he had, starting with the dictionary: the dots, the numbers, hydrogen and its neighbours. By the end of the month they could read the numbers on every page, and almost nothing else. A Brazilian mathematician found the same formula in the pages on the machines and in the pages on the living things, and could not say why. A Korean chemist stood for an hour in front of a crystal turning in the air that, by every law she knew, could not exist. Then she asked for a chair.

Then they found what Natoshi had missed. The pages were linked. A drawing of a machine called for a substance from the chemistry. The substance could only be made with a formula from the mathematics. The formula was written in symbols that only the biology explained. No page could be read alone, and no country could read them alone. There was more in them than the scientists of any one nation could read in a hundred years.

In the spring Mabinti M'Beke stood up in the General Assembly with two photographs on the screen behind her. One was Natoshi's own: the tall thin beings under two red suns. The

other was Natoshi himself, a young man in a white shirt outside Xerox PARC, squinting into the sun.

In the front row sat a grey-haired woman and a man of about forty-five in a dark suit: Laura and Greg Sakamoto. The United Nations had flown them from California.

"This man worked alone in a garage for ten years," Mabinti said. "It cost him his work, his friends and his family. He died at his bench on the morning he meant to show it to them. He asked for only one thing: that it should belong to all of us. Today it does." She turned to the front row. "Mrs Sakamoto. Mr Sakamoto. He wanted you to be the first to see it. Forgive us for being late."

The hall stood up. Greg did not. He sat with his mother's hand in his, looking up at the young man on the screen.

All those nights in the garage, he thought. He was not lying.

Then Mabinti turned to the other photograph.

"For ten thousand years we have fought over rivers, borders, gods and the colour of our skin," she said. "They had two suns, and they lost them. Before the end they sent everything they knew out into the dark, for anybody who could count. It took three million years to reach us. It was sent to all of us. It can only be read by all of us."

It did not end every war that year. But one by one, governments that would not sit in the same room sent their scientists to the same table, because the page each of them needed lay on the other side. Two countries that had fought over the same mountain for seventy years lent each other their best physicists. By the third year a hundred and sixty nations had signed the Council's treaty: no weapon from the sphere, no secret page, every result for everybody.

The first thing they built from it was small: a grey crystal the size of a grain of rice that pulled clean water out of dry air. A village in Gambalia drank from it first.

The recording from the doll went to the international court in The Hague, with Mabinti's statement and the face under the mask. A warrant was issued for N'Gula Agimbi S'alo. He never left his country again. That spring the Russian and Chinese officers were not on the parade stand.

Mabinti went back to New York with the doll in her leather bag. On the wall of her office, beside the old photograph of a young soldier with a sunburnt neck, she hung a new one: an old soldier with his arm in a sling and a cold cigar, standing under the Eiffel Tower.

Jay gave Maksym Belenko's army watch to Capitaine Leclercq, who gave it to a prosecutor in The Hague, who watched one morning in a classroom in a village called Ternivka until the end, and was sick in a basin, and opened a file. An old man with a gold tooth came

forward in Paris a month later and asked to make a statement. He had held the door, he said. He had been nineteen. He wanted to say it out loud before he died.

Amanda Gladwell was charged in Paris with attempted murder. Her lawyers argued for months that the machine belonged to Gladwell Research. The court found that the box had been bought for four dollars and ninety-nine cents by a fifteen-year-old boy, eleven years before he ever worked for her. The grey backpack was hers. Rashid sent it back to her, empty, with the original receipt from the hardware store.

Dennis Laurent's foundation paid for the Council's rooms under the Louvre, and for everything in them, and when the work was finished he had a small bronze plaque put by the door. It said SAKAMOTO. Nothing else.

One morning in the spring he rode his bicycle along the Seine to La Défense with his faded green bag over his shoulder, and when he stopped at the red light by the river, there was no grey armoured car thirty metres behind him. For the first time in eighteen years, nobody was following him at all.

Marvin Caswell gave Capitaine Leclercq a long statement about a man called Maksym Belenko and a warehouse with eleven bullet holes in the wall. The Gladwell board read about the smoke detector, and he cleared his desk the same week. On Sundays he no longer went to the woods.

Colonel Anatoliy Kushnir was retired by his generals the week after the broadcast. Three weeks later he flew out of his own country with a second passport and a bank card from an island that had never agreed to send anybody back, and lived there in summer clothes, and never answered his old phone.

In a kitchen in California Maria Karpova opened a padded envelope from the French police. Inside was a plastic pill box marked with the days of the week, split down the middle and taped together, and a short letter signed F. Leclercq, Capitaine, which said where her husband was buried, and that he had kept her box with him to the end.

She sat for a long time at the table. Then she took the envelope from Zhabyn out from under the sugar tin, turned it over to the side with the total underlined twice, and went to buy a one-way ticket to Warsaw.

At the farmhouse, the night before the Council took the machine, Jay read Liz Ortega's tin flag pin for Hill. It showed a courtroom in Texas full of people with their right hands raised, and a woman of twenty among them saying the words of an oath, the day she became an American. Thirty-five years later the same woman stood on a lawn in Virginia beside her

granddaughter in a dark blue suit, holding a small flag in both hands. Hill sent Liz the recording with one line: *Asked, and answered.*

Then Jay kept his promise from the first night in the lab. He read Hill's envelope again, slowly, back through the drawer and the Bible, and they listened to every one of them who had ever held it. Hill's mother. His grandmother. An old woman's voice, very near: *...and he was the President's friend, child, don't you let anybody tell you different.* Hill sat with his eyes shut and did not ask him to stop.

He flew home to Grace with his stitches and a box of French mints, and she asked him if he was all right. That was all she asked.

Horatio Davenport retired in the spring with a medal he never wore, and spent his Sundays in his sister's backyard teaching two nephews to throw a football, with a cold cigar in the corner of his mouth.

The Council gave each of the people who had found the machine one hour with it, in the room under the Louvre, with two of its members sitting by the door. Rashid used his on a Tuesday evening. He took the green stone off its cord, laid it on the table, and aimed the ordinary beam at it. The coloured one. The one that can only look.

A workshop in Montreal. A workbench covered in radio parts, a brown work coat, a pair of thick fingers holding a small screwdriver. And a voice, close and warm, saying something to a small boy that the copy on his screen had never said, and never could have guessed.

Rashid listened until the hour was over. Then he switched it off, and did not go in. That night he flew home to California, to the cold back room where the green lights still blinked.

Yvonne Lefèvre was given one hour with the machine, the first hour the Council gave anybody. She used it on the Virgin panel with eleven counts of titanium in the paint. The panel had seen a cold studio in Paris in the winter of 1931 and a thin man with a cough, mixing white paint and humming, signing nothing. She watched him work for the whole hour. She never published his name. She said a man who had worked that hard to be nobody had earned it.

She gave up her flat for a bigger one with a garden, because Titane needed company.

Erwin flew to Paris in the cabin, in a soft bag under the seat, and spoke to nobody for eleven hours.

When the bag was opened on the kitchen floor in Paris, he came out slowly, looked at the new kitchen, the woman, the bowl, and the grey cat sitting on the windowsill with total contempt.

A second cat, Erwin thought. A second bowl. She has a garden. Yes. Good.

He walked once round each of Jay's ankles, because the bowl was empty, and this usually worked.

It worked.

That night, when the lights were out, he found the box. It was not black any more, and it did not smell of Jay. It was an ordinary cardboard box that Yvonne's new oven had come in. He climbed into it, turned round three times, and lay down, and the grey cat came and lay down with its back against the outside of it, because it was warmer than the floor.

Jay stood in the doorway in the dark and watched them.

Somewhere, a long way off, a people under two suns had made a black sphere, packed it in a metal shell and sent it across space. The Council's first report said so on its last page: *They were dying. They sent us everything they knew, and the code of their own bodies, so that one day somebody could bring them back. It took three million years to reach us. We have not seen their faces yet.*

Four ninety-nine to find out what it is, his father had said. That's cheap for a question.

Jay went back to bed. Yvonne turned over, half asleep, and put her hand flat on his chest.

In the kitchen, Erwin was already asleep.

Thank You for Reading

Thank you for reading *The Temporal Viewer*.

If the story stayed with you, I would love to hear from you: what you liked, what you did not, and which moment in history you would want to watch. You can write to me at thetemporalviewer@gmail.com.

If you have a minute, a short review on the store where you found the book helps other readers find it.

— Moises Davidescu