

# Shephard's Drone

Brett Frischmann

**When a young female geneticist sees an infant die before her eyes, minutes after receiving a routine genetic modification shot, she's forced to question what she's always believed about her field—and determined to find out what went wrong. Her search for answers uncovers a deeper truth about how technology shaped human evolution.**

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**One: Adam's Life**

*Boston, Massachusetts. May 2154.*

She called the maternity ward Santa's Workshop. The nurses were busy little elves, and the doctors, well, she wasn't sure—Santa, maybe, but not quite. The doctors were never jolly or fat. But they did deliver what people wanted, straight off their wish lists. Usually, anyway.

Fredric caught her attention, "Kate, let's go. The woman in Room 542 delivered, and we're scheduled to meet with them for a prep session. If necessary, just reassure them that we'll only take their baby for a half hour or so and the shot doesn't hurt a bit."

Kate nodded. "Sure, now that I'm on my fourth observation, I'm getting the hang of it. I looked over their paperwork last night. Standard mods for their boy, right?"

"Yes."

They left their office, walked down the well-lit hallway, and hit the stairs. Kate had been pleasantly surprised when she learned that Fredric also preferred to take the stairs. They both liked the exercise and hated elevators. Kate felt she had to make up for her pretty mediocre physical condition. Compared with most bio-mods who had heavy physical enhancements from Day One on the genetics side, as well as continued enhancements throughout their lives on the pharmacological side, Kate felt like a wimp. She couldn't lift twice her bodyweight, run a ninety-minute marathon, or swim like a goddamn dolphin. Her parents were scientists, very successful ones, and they'd put a heavy emphasis on her intellectual capabilities, especially her cognitive capacity and fluid intelligence. She was grateful, of course, because it had helped her become a rising star in the genetics field. Her physical condition was fine, of course, because generations of significant biomedical improvements were simply part of her basic composition. But she still felt the need to squeeze in exercise whenever she could, to make up for whatever deficits

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she might have. Maybe Fredric felt the same way. He also was quite intelligent, even if a bit of a goofball.

Nicola Gwynne and family were inside room 542. Fredric knocked gently, and they waited. A young nurse opened the door. She was cute and bubbly. *Elf?* Kate thought. "Ah, here they are, just on time. Mr. and Mrs. Gwynne, let me introduce Doctor Stroud and Doctor Genet."

Fredric reached out his hand to Mr. Gwynne, a thin, light-skinned, middle-aged man wearing what Kate was beginning to recognize as the tired, blissful look of a brand-new parent. They shook hands. "It's a pleasure." Kate caught something in Fredric's eye, but she couldn't figure out what. It passed too quickly, like a lightly struck nerve. "I'm Doctor Fredric Stroud, the pharmacological mod specialist. I administer the cocktail. Let me introduce my associate, Doctor Kate Genet. She's a geneticist who also works for Biomen. She does research on pharmacogenetic modifications in adults, but she's doing a three-month rotation in the maternity ward. She's here to observe."

Kate stepped forward and extended her hand to Mr. Gwynne. He shook her hand weakly. "This is my wife, Nicola, and our son, Adam." He stepped to the side, and Kate saw Nicola holding the newborn. For a moment, she lost her breath, started to sweat, and felt a pull within her stomach. She smiled as she stared at the two of them on the bed. And then the feeling faded, her breathing resumed, and all was normal. *Did anyone notice?*, she thought, *I don't think so.* "Hello. Thank you for allowing me to share this moment with you. Congratulations on your beautiful boy." Her eyes returned to Adam. They got what they wished for all right.

"Thank you," each replied. He really was beautiful. Adam had those dull bluish eyes and wrinkled, raisin skin that all newborns have, and he looked healthy. He was very quiet and almost odorless, Kate noticed. She surprised herself by wanting to hold him. She almost said so, but luckily Fredric started his routine.

Fredric took out his notepad and called up Nicola's chart. "Let's go over the basics first. I need to dot the I's and

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cross the T's as they used to say, and I still do." He smiled at his joke. Everyone else grinned politely.

"Let's see. Nicola, your bio-mod profile. Your parents have A-type genetic profiles, which mostly passed to you, and you've passed to Adam. They modded you pre-birth with an emphasis on increasing cognitive function. They didn't do much more."

"More?" Joseph interrupted. His face was blank, eyes wide, like a schoolkid's. Nicola looked at him with eyebrows raised, her lips closed. Kate couldn't tell if she was annoyed or worried. He had a good deadpan look. Maybe he was messing around with Fredric.

Fredric played along. "Well, no extra physical, behavioral or emotional mods, nothing beyond the standard genetic changes everyone did at that time to keep on track." He coughed and then proceeded in a school teacher voice. "Lots of their generation did the same. Today, there is so much more variation in the pre-birth mods people choose. It used to be mostly cog mods, and then for a while, behavioral and emotional normalization was very popular, but now it's all over the map. Parents want to design their children to give them a leg up. Only so much you can choose to do, of course."

"Why is that, Doctor?" Joseph asked, his face still deadpan but his voice carrying genuine notes of curiosity. "I mean, why can't we choose to have it all?" A decent question given progress made in the past few decades, Kate thought, but then she felt tension grip Fredric.

"Sorry, I didn't quite put that correctly." Fredric responded. He took a breath and lost the school teacher voice. "We do get it all at the most basic level. For generations, we've made a wide range of basic genetic improvements. You know, you're superhuman in most respects. We all are." He clenched his notepad, flexed his arms and shoulders, puffed his chest, and held the pose for a few seconds. Kate almost laughed aloud. Fredric continued. "It's the targeted enhancements, where parents place a greater emphasis on specific capabilities, which are only potentials, really, possibilities that can be developed and exploited in life. These push mods, as we

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call them, are the ones I was referring to, really. Studies show that push modifications dilute each other; so parents must choose. The science is quite interesting, and ...”

“OK, Doctor, thanks. I get it,” Joseph intervened. “We didn’t choose push mods.” Kate was disappointed because she wanted to see how well Fredric would explain the scientific studies, which were inconclusive as to the cause and thus a mystery for researchers like her to solve.

“Alright, then, we’ll go over your choices in a minute. So your parents relied mostly on post-birth pharmacological interventions, probably so they could make adjustments over the course of your childhood and adolescence, which I see they did. OK, so I want you to take a quick look at the form I have, verify the mods you’ve had, and sign the bottom.”

She browsed and signed with her finger.

“Excellent. Now, Joseph. Let’s see. Your parents have the same profile as Nicola’s ...”

“Had.”

“Huh?”

“Had. My parents are dead. But yes, they had the same profiles as Nicola’s parents. Anyway, go on.” Kate shuddered at Fredric’s mistake. It was in the documentation, for goodness’ sake.

“OK, sorry. Where was I? Your parents didn’t mod you much pre-birth—just behavioral controls, nice—and uh, they also focused on pharmacological mods. You’ve had a steady series of cog-mods. Looks like Adam is going to be a little Brainiac. Here take a look, verify, and sign this.”

Joseph looked it over, much more carefully than his wife had, and signed. Kate shifted her position, stepping closer to Joseph. In contrast with the others she’d observed, he actually read the details. She stole a glance at Adam, who lay peacefully, oblivious. Kate couldn’t help but smile at him.

“Let’s see what you’ve done with Adam, and what we’re going to do. Ah, so you followed your parents’ paths. Only the standard pre-birth mods. You’re going the pharmacological route. Excellent. We can work with you on setting up the protocols for monitoring and adjustments over the next

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decade. All we have to do today is give Adam the basic pharmacological cocktail, essentially to plant the seed. It's important that we do this today."

"Why?" Nicola asked. Kate concealed a smile. Mothers always asked why at this point in Fredric's routine, even though they knew the answer.

Fredric answered. "It needs to be done within 48 hours of birth for safety and efficacy. Standard practice. So let's see what mods you've chosen to include in the cocktail."

Fredric looked down at his notepad, nodded, and held it out so the Gwynnes could confirm the mods they'd chosen. Joseph took the notepad and read it carefully. He looked over at his wife, nodded, and then signed. He handed the notepad to her. She browsed and signed. They suddenly looked very tired, almost frightened. Their heads hung a little, like dolls. Kate wanted to comfort them, but she retained her distance, as was appropriate for an observer. She left it to Fredric.

"Don't worry about the procedure. It isn't a big deal. I do it every day, dozens of times each day. Never had a problem. It's a simple, old fashioned series of injections with a hypodermic needle. Three little pinpricks. I won't lie to you. It hurts a little, but just a little. He'll barely feel it. And then we'll need to hold him under observation. We'll watch all of his vitals, make sure he's received all the juice he needs. We'll have him back in your arms half an hour later."

They picked their heads up, smiled and seemed a little better, but not happy, not the happiest people in the world. They should be, Kate thought, he's perfect.

"Any questions?" Fredric asked.

"No. We understand the procedure. It's just hard to let him go, you know," Nicola said.

"I understand. But don't worry. He'll only be away for a short time. We'll be back in about an hour. In the meantime, if you have any questions, you can buzz me." Fredric turned to leave.

Kate followed Fredric down a long hallway and then down two flights. On the stairs, he stopped and turned. "What

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did you think of them?" He didn't hesitate long enough for her to answer. "She was alright, but he bugged me."

"Well, what do you expect? You didn't know his parents had passed. I mean, ..."

"Huh? That wasn't a big deal." He shrugged his shoulders. "It happens. Didn't even faze him. No, I mean before that. From the beginning." He paused, scratched his neck. "I couldn't figure him out." He began to turn but stopped and gave her a chance to respond. She shook her head and said, "He seemed a little anxious, I guess."

They continued down the stairs and went to the special room in the hospital where the drugs and biologics were kept. Strict biometric security measures were in place for this room, not that Kate could actually see any of them. Only Biomen employees were admitted. Hospital employees couldn't enter the room—too many trade secrets, too many valuable and potentially dangerous materials, and some very expensive, high tech equipment. Security measures like these only curtailed the black market for pharma mods. There was just too much demand, especially among the middle class without employer sponsorship. Kate pictured the beautiful nurse for a moment and shook her head; she'd be covered. Of course, the recipes were easy to come by. You could reverse-engineer them from a legit dose, but printers needed raw materials, and those were tightly regulated and expensive.

Fredric told Kate that she was free to watch him put the cocktail together but suggested that there was nothing interesting to see. Kate had seen it done many times before, and if there was nothing challenging, then there was nothing worth sticking around to watch and learn. This part felt natural to her. It resonated with her scientific mind and instincts. She got it. She felt very differently when meeting with the families. No, she wouldn't watch Fredric do his calculations and tests on the formulations.

Instead, she'd go back to Room 542. She didn't say anything to Fredric as she left the room, not that he would have noticed. Her heart pumped more now as she walked the hallway than when she'd run up the stairs. Could be me, she

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thought. A husband, a child, maybe two. She blew the hair out of her face. It was too much though. It was not like she even had a boyfriend. No, she was too busy, and didn't really try anymore. Besides, she would have to endure too much, and she'd already decided against that. But these past few weeks in the maternity ward had stirred something inside her. It wasn't surprising, but she hadn't expected the feelings to be this strong. She avoided dwelling on it though, not much to diagnose and no harm in letting the feelings linger. Natural emotions for a 33-year-old woman, that's all.

It raised some interesting questions that she'd never thought about before, questions she understood and could reflect on. She considered what mods she would choose for her own child. Most likely, she'd have followed the same path as her parents—nothing very exciting or out of the ordinary. But then she wondered what that would even mean; what would be an exciting set of modifications? Sure, there were some people who gambled with their children, or perhaps for their children. But did parents really have a clue about what mods actually would give their kids an advantage when everyone was modified in one form or another? Better to stick with a conventional, balanced mod program with an emphasis on whatever particular competencies were already genetically advanced in the parents and naturally passed down the familial line. So for her, heavy cog mods. She'd have raised a little scientist and shared with him everything she knew and loved, her life passions. These thoughts made her feel good and a little selfish.

Then, an odd idea crossed her mind: what would it be like to start fresh, to be unmodified, just plain human. It seemed like such an antiquated idea. There were some non-mods in the Midwest obviously, and for a moment, she thought she might get a kick out of seeing what they were like.

She arrived at Room 542. She stood just outside and peered in the room through a small glass window. They were talking quietly but not saying much, and they seemed so anxious. Fredric arrived a few minutes later. She walked into the room with him. "We're all set. Any last minute questions?"

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“No,” whispered Nicola. She wore a thin smile, and then looked into Adam’s eyes, touched his nose with hers gently. Time slowed for what seemed the most intimate of kisses.

Kate stepped toward Nicola. As the nurse approached to do her job, Kate tensed. She stepped aside and let the nurse scoop up the baby from Nicola’s arms. Without Adam in her arms, Nicola seemed to shrink, and her eyes darted between Adam and the nurse as she put Adam in a little padded cart and wheeled him away.

“Alright, then. We’ll be back soon.” Fredric said.

Kate walked with Fredric down the hallway in silence. They entered the room where the nurse had taken Adam. Three shots and a wailing infant later, Kate wondered whether they really needed to observe the babies in this room, away from the parents, for medical reasons. Maybe it was just to save the parents the distress of her hearing their babies scream like banshees.

As promised, they wheeled Adam back within a half hour. Fredric said, “Everything went smoothly.” The parents relaxed. Nicola took Adam from the nurse and held him tightly. “Thank you, everyone. We’re so happy.” Kate longed to stay and bask in their joy, but snapped out of it as Fredric tugged her toward the door. “We’ll leave you three now. We’ll be in touch in three months to set up a follow-up meeting, just to check how things are going. In the meantime, you are in good hands here. Get some rest. And congratulations!” Kate smiled, “Yes, congratulations.”

Back in their office they fell into their routines, Fredric recording the details of Adam’s cocktail while Kate checked the paperwork for the next meeting.

A loud beeping noise startled Kate. She had been daydreaming at her desk, but she couldn’t remember the dream. The beeping prevented any recall. Fredric popped up from his chair. “Let’s go. C’mon, Kate. Room 542.” Only then did she notice the little red light flashing on his desk; the beeping was coming from somewhere on his desk too. They ran, the beeping noise ringing in Kate’s head. No one else in the hallways seemed to hear it. They didn’t get out of her way.

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When she entered room 542, Kate felt an intense wave of biochemical feedback, jumbled emotions heavily laden with confusion and dread. The loud rhythmic beeping was suffocating. She spotted a flashing red light in a corner of the room. She stepped to the side as another nurse rushed in. Nicola was crying. Fredric was beside her. Joseph was shuffling, two steps to the left and then back to the right, staying as close to Nicola and Adam as he could without getting in the way of the medical professionals who surged into the room.

Adam was oddly quiet. He was breathing slowly, but otherwise seemed fine.

To one of the nurses, Fredric asked, "What happened? What triggered the alarm?" She stared back at him, shook her head, but said nothing. Another nurse turned her head toward Fredric as if she were about to answer him, but she turned away and stared at a screen. A third nurse, who had one hand on the bed while she leaned in and stared at Adam, popped up and responded, "We're not sure. Vitals are fine. We're checking."

The second nurse, who stared at the screen, shifted her stance and tilted her head. "Doctor Stroud, do you see anything?" Fredric rushed over, looked at the screen, and shook his head. He murmured, "Where the hell is he?" and then told the nurse, "Get Doctor Schmidt."

Suddenly, the baby turned a dark, purplish grey color. His blue eyes were open, and they stayed open, staring blankly. It progressed so rapidly, so abruptly. Everyone in the room froze. All of the air in the room was sucked out; the beeping was gone. All eyes were pulled into Adam's frozen blue eyes, like light into a black hole. No one moved. No one could have, even if they tried, but no one tried. The stillness seemed to last an eternity, an eternity of painful disbelief and wonder in a split-second.

It broke.

The parents were screaming. The nurses had never seen anything like this before, and it showed. The masks they had carefully constructed for moments like this were cracked,

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broken, useless. Death, they'd seen, been prepared for, but only death of the elderly or by accident. Not an infant, not like this.

Tears flowed down Kate's cheeks. This can't be happening. He can't be dead. She looked to Fredric for an answer, but he was lost in his own mind, muttering to himself—Where was Schmidt? Was there an incompatibility that he hadn't seen? An older doctor came running into the room, saw the dead infant, and stumbled backwards as if struck hard in the chest.

Kate looked to Adam, his perfectly round head, tufts of black hair. The eyelashes she'd been envying earlier. He stared back with dead blue eyes.