

# Also by JP Delaney

The Girl Before Believe Me

# The Perfect Wife

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Quercus

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This book is a work of fiction. Names, characters, businesses, organizations, places and events are either the product of the author's imagination or used fictitiously. Any resemblance to actual persons, living or dead, events or locales is entirely coincidental.

Extract from Four Quartets by T.S. Eliot by permission of the publishers, Faber and Faber Ltd.

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Typeset by CC Book Production Printed and bound in Great Britain by Clays Ltd, Elcograf S.p.A. When Pygmalion saw the way these women behaved, he was disgusted by the many faults nature has instilled in the female sex, and for a long time lived as a bachelor, without a wife to share his bed.

Ovid, Metamorphoses

What is love but another name for positive reinforcement?

B. F. Skinner, Walden Two

You're having that dream again, the one where you and Tim are in Jaipur for Diwali. Everywhere you look, every doorway and window, there are lanterns and candles, firecrackers and fairy lights. Courtyards have become flickering pools of flame, their entrances surrounded by intricate designs of coloured rice paste. Drums and cymbals throb and sizzle. Surrendering to the din and confusion, you surge with the crowd through a market, the stallholders urging platters of sweets on you from every side. On an impulse you stop at a stall where a woman decorates faces with beautiful Hindi patterns, the smell of sandalwood from her brushes mingling with the acrid, savoury cordite from the firecrackers and the aroma of kaaju, roasting cashew nuts. As she paints you, deft and quick, a cluster of young men dance past, their faces painted blue, their muscular torsos bare, then they come back, dancing just for you, their expressions deadly serious. And then, the final touch, she paints a bindi on your forehead, right between your eyes, telling you how the scarlet dot marks you out as married, a woman with all the knowledge of the world. 'But I'm not,' you protest, almost pulling away, fearful you're going to offend some local sensibility, and then you hear Tim's laugh and see the box he produces from his pocket and, even

before he goes down on one knee, right here in the midst of all this noise and mayhem, you know this is it, he's really going to do it, and your heart overflows.

'Abbie Cullen,' he begins, 'ever since you erupted into my life, I've known we have to be together.'

And then you're waking up.

Every part of you hurts. Your eyes are the worst, the bright lights searing into your skull, the ache in your brain connecting with the stiffness in your neck, soreness all the way down your spine.

Machines beep and whirr. A hospital? Were you in an accident? You try to move your arms. They're stiff – you can barely bend your elbows. Painfully, you reach up and touch your face.

Bandages encase your neck. You must have been in an accident of some kind, but you can't remember it. That happens, you tell yourself groggily. People come round from crashes not remembering the impact, or even having been in a car. The important thing is, you're alive.

Was Tim in the car as well? Was he driving? What about Danny? At the thought that Danny or Tim might have been killed, you almost gasp, but you can't. Some change in the beeping machine, though, has alerted a nurse. A blue hospital uniform, a woman's waist, passes at eye level; she's adjusting something, but it hurts too much to look up at her.

'She's up and running,' she murmurs.

'Thank God,' Tim's voice says. So he's alive, after all. And right here, by your bedside. Relief floods through you.

Then his face appears, looking down at you. He's wearing what he always wears: black jeans, a plain grey T-shirt and a white

baseball cap. But his face is gaunt, the lines deeper than you've ever seen them before.

'Abbie,' he says. '*Abbie*.' His eyes glisten with tears, which fills you with alarm. Tim never cries.

'Where am I?' Your voice is hoarse.

'You're safe.'

'Was there an accident? Is Danny OK?'

'Danny's fine. Rest now. I'll explain later.'

'Have I had surgery?'

'Later. I promise. When you're stronger.'

'I'm stronger now.' It's true: already the pain is receding, the fog and grogginess clearing from your head.

'It's incredible,' he says, not to you but the nurse. 'Amazing. It's her.'

'I was dreaming,' you say. 'About when you proposed. It was so vivid.' That'll be the anaesthetic, you realise. It makes things richer. Like that line from that play. What was it? For a moment the words elude you, but then, with an almost painful effort, a *clunk*, you remember.

I cried to dream again.

Again Tim's eyes fill with tears.

'Don't be sad,' you tell him. 'I'm alive. That's all that matters, isn't it? We're all three of us alive.'

'I'm not sad,' he says, smiling through his tears. 'I'm happy. People cry when they're happy, too.'

You knew that, of course. But even through the pain and the drugs, you can tell those aren't everything's-going-to-be-allright-now tears. Have you lost your legs? You try to move your

feet and feel them – slowly, stiffly – responding under the blanket. Thank God.

Tim seems to come to a decision.

'There's something I have to explain, my love,' he says, taking your hand in his. 'Something very difficult, but you need to know right away. That wasn't a dream. It was an upload.'

Your first thought is that you're hallucinating – that this, not the dream about him proposing, is the bit that isn't real. How can it be? What he's saying to you now – a stream of technical stuff about mind files and neural nets – simply makes no sense.

'I don't understand. Are you saying something happened to my brain?'

Tim shakes his head. 'I'm saying you're *artificial*. Intelligent, conscious . . . but man-made.'

'But I'm fine,' you insist, baffled. 'Look, I'll tell you three random things about myself. My favourite meal is salade niçoise. I was angry for weeks last year because my favourite cashmere jacket got eaten by moths. I go swimming almost every day—' You stop. Your voice, instead of reflecting your rising panic, is coming out in a dull, croaky monotone. A Stephen Hawking voice.

'The damage to that jacket was six years ago,' Tim says. 'I kept it, though. I've kept all your things.'

You stare at him, trying to get your head around this.

'I guess I'm not doing this very well.' He pulls a piece of paper from his pocket. 'Here – I wrote this for our investors. Maybe it'll help.'

### **FAQ**

**Q**: What is a cobot?

A: 'Cobot' is short for 'companion robot'. Studies with prototypes suggest the presence of a cobot may alleviate the loss of a loved one, providing solace, company and emotional support in the aftermath of bereavement.

Q: How will cobots differ from other forms of artificial intelligence?

A: Cobots have been specifically designed to be empathetic.

**Q**: Will each cobot be unique?

A: Each cobot will be customised to closely replicate the physical appearance of the loved one. Social-media records, texts and other documents will be aggregated to create a 'neural file' reflecting their unique traits and personality.

There's more, much more, but you can't focus. You let the sheet fall from your hand. Only Tim could imagine that a list of factual questions and answers could help at a time like this.

'This is what you do,' you say, remembering. 'You design artificial intelligence. But that's something to do with customer service – chatbots – '

'That's right,' he interrupts. 'I was working on that side of it. But that was five years ago – your memories are all five years out of date. After I lost *you*, I realised bereavement was the bigger need. It's taken all this time to get you to this stage.'

His words take a moment to sink in. *Bereavement*. You've just realised what he's trying to tell you.

'You're saying I died.' You stare up at him. 'You're saying the real me died – what? Five years ago. And you've somehow brought me back like this.'

He doesn't reply.

You feel a mixture of emotions. Disbelief, obviously. But also horror at the thought of his grief, at what he must have been through. At least you were spared that.

Cobots have been specifically designed to be empathetic . . .

And Danny. You've missed five whole years of his life.

At the thought of Danny, a familiar sadness washes over you. A sadness you firmly put to one side. And that, too – both the sadness, and the putting aside – feels so normal, so *ordinary*, that it can't be anything except your own individual emotion.

Can it?

'Can I move?' you say, trying to sit up.

'Yes. It'll feel stiff at first. Careful - '

You've just attempted to swing your legs on to the floor. They go in different directions, weak as a baby's. He's caught you just in time.

'One foot, then the other,' he adds. 'Shift your weight to each in turn. That's better.' He holds your elbow to steady you as you head for the mirror.

Each cobot will be customised to closely replicate the physical appearance of the loved one . . .

The face that stares back at you above the collar of a blue hospital gown is *your* face. It's puffy and bruised-looking, and there's a faint line under your chin, like the strap of those hats soldiers wear on ceremonial parades. But it's still unarguably *you*. Not something artificial.

'I don't believe you,' you say. You feel weirdly calm, but the conviction sweeps over you that nothing he's saying can possibly be true, that your husband – your brilliant, adoring, but undeniably obsessive husband – has gone stark raving mad. He's always worked too hard, driven himself right to the edge. Now, finally, he's flipped.

'I know it's a lot to take in,' he says gently. 'But I'm going to prove it to you. Look.'

He reaches behind your head and fiddles with your hair. There's a sucking sound, a strange, cold sensation, and then your skin, your face – your *face* – is peeling away like a wetsuit, revealing the hard, white, plastic skull underneath.

You can't cry, you discover. However great your horror, you can't shed actual tears. It's something they're still working on, Tim says.

Instead you stare at yourself, speechless, at the hideous thing you've become. You're a crash-test dummy, a shop-window mannequin. A bundle of cables dangles behind your head like some grotesque ponytail.

He stretches the rubber back over your face, and you're you again. But the memory of that horrible blank plastic is seared into your mind.

If you even *have* a mind. As opposed to a neural net, or whatever he called it.

In the mirror, your mouth gapes silently. You can feel tiny motors under your skin whirring and stretching, pulling your expression into a rictus of dismay. And, now you look more closely, you realise this face is only an approximation of yours, slightly out of focus, as if a photograph of you has been printed on to the exact shape of your head.

'Let's go home,' Tim says. 'You'll feel better there.'

Home. Where's home? You can't remember. Then - *clunk* - a memory drops into place. Dolores Street, in central San Francisco.

'I never moved,' he adds. 'I wanted to stay where you'd been. Where we'd been so happy.'

You nod numbly. You feel as if you ought to thank him. But you can't. You're trapped in a nightmare, immobile with shock.

He takes your arm and guides you from the room. The nurse – if she was a nurse – is nowhere to be seen. As you walk with painful slowness down the corridor, you glimpse other rooms, other patients in blue hospital gowns like yours. An old lady gazes at you with milky eyes. A child, a little girl with long brown ringlets, turns her head to watch you pass. Something about the movement – just a little further than it ought to go, like an owl – makes you wonder. And then the next room contains not a person but a dog, a boxer, watching you exactly the same way –

'They're all like me,' you realise. 'All . . .' What was his word? 'All *cobots*.'

'They're cobots, yes. But not like you. You're unique, even here.' He glances around a little furtively, his hand increasing its pressure on your elbow, urging you to go faster. You sense there's something he's still not telling you, that he isn't supposed to be whisking you away like this.

'Is this a hospital?'

'No. It's where I work. My company.' His other hand pushes insistently in the small of your back. 'Come on. I've got a car waiting outside.'

You can't walk any faster – it's as if you're on stilts, your knees refusing to bend. But even as you think that – *your knees* – it gets a little easier.

'Tim!' a voice behind you calls urgently. 'Tim, wait up.' Relieved at the chance to pause, you stop to look. A man about

Tim's age, but more thickset, with long, straggly hair, is hurrying after you.

'Not now, Mike,' Tim says warningly.

The man stops. 'You're taking her away? Already? Is that a good idea?'

'She'll be happier at home.'

The man's eyes travel over you anxiously. His security pass, dangling round his neck, says *Dr Mike Austin*. 'She should be checked out by my psych team, at least.'

'She's fine,' Tim says firmly. He opens a door into what looks like a large open-plan office area. About forty people are sitting at long, communal desks. No one is pretending to work. They're all staring at you. One, a young Asian-looking woman, raises her hands and, tentatively, applauds. Tim glares at her and she quickly looks down at her screen.

He guides you straight through the office towards a small reception lobby. On the wall behind the front desk is a colourful street-art mural framing the words *IDEALISM IS SIMPLY LONG-RANGE REALISM!* Something about it seems familiar. You want to stop, to look more closely, but Tim is urging you on.

Outside, it's even brighter. You gasp and shield your eyes as he steers you past a polished steel sign saying *SCOTT ROBOTICS*, the initial *S* and *R* like two upended infinity symbols, towards a waiting Prius. 'The city,' he tells the driver, while you struggle to fold your unresponsive limbs into the back. 'Dolores Street.'

Once you're both in and the Prius is moving off, his hand reaches for yours. 'I've waited so long for this day, Abbie. I'm so happy you're finally here. That we're together again, at last.'

You catch the driver looking curiously at you in his rear-view mirror. As you leave the parking lot he glances up at the sign, then back at you again, and something dawns in his expression. Understanding. And something else as well. Disgust.

## **ONE**

The very first we knew of Tim's plan to hire an artist-in-residence was when we heard him talking to Mike about it. That was typical of Tim. He might exhort all of *us* to work more collaboratively and openly, but the same directive blatantly didn't apply to *him*. Mike was one of the few people he would sometimes actually listen to, on account of them starting Scott Robotics together in Mike's garage, almost a decade ago. Even so: it might have been Mike's garage, but it was Tim's name on the company. That told you pretty much all you needed to know about their relationship.

So, regarding the artist-in-residence proposal, it wasn't as if Tim was discussing it with Mike so much as telling him. But it was also typical of Tim that his announcement had to be prefaced by a loud, passionate tirade about what was so stupid and wrong and screwed up about the way we currently did things, even though we were only doing them the way he'd argued equally passionately for the last time he made us change everything.

'We need to wake the fuck up, Mike,' he was saying in his rasping British accent. 'We need to get more *creative*. Look at these people –' and here his gesture took in all of us, working away in Scott Robotics' open-plan HQ – 'and tell me they're thinking outside the paradigm. They need to be *stimulated*. They need to

be *excited*. And we're not going to do that with free bagels and Pilates.'

Tim once told a reporter that having an idea about what the future would look like and then waiting for it to happen was like being permanently stuck in traffic. He's not a patient man. But he is the closest thing to a genius most of us have ever worked with.

'Which is why we're hiring an artist,' he added. 'Her name's Abbie Cullen. She's smart – she works with tech. She *excites* me. We're giving her six months.'

'To do what?' Mike asked.

'Whatever the hell she likes. That's the whole *point*. She's an artist. Not yet another time-serving worker-drone.'

If any of us were offended by that description – among our number we counted quite a few millionaires, veterans of some of Silicon Valley's most notable start-ups – none of us showed it, although we were already wondering how long the free bagels would now continue.

Mike nodded. 'Great. Let's get her in.'

We waited for the cry of 'Listen up, people!' that usually prefaced Tim's announcements. But none came. He'd already gone back into his glass-walled cubicle.

Many of us, of course, were already typing *Abbie Cullen artist* into our search engine of choice. (When you actually work in tech, using Google or Bing is a bit like a craft brewer drinking Budweiser.) So, pretty much instantly, we knew the bare facts about her: that she had recently exhibited at SXSW and Burning Man; that she was originally from the South; that she was twenty-four years old, a redhead, tall and striking and a surfer; and that her website said, simply, *I build artifacts from the future.*We

had also found, and circulated, some video clips of her work. Seven Veils was a circle of electric fans, pointing inwards at one another to create a vortex in which thin strips of coloured silk tumbled and twirled perpetually. Earth, Wind, Fire was a cyclone of flame, bouncing like a roly-poly toy atop a gas burner as it battled competing blasts of air. Most spectacular of all was Pixels, a grid of dozens of what looked like table tennis balls that floated as if on a cushion of air, but also interacted with the gallery visitor. Sometimes the balls seemed to flicker, like a shoal of fish; sometimes they pulsed lazily, like water streaming behind a boat, or formed almost-recognisable shapes: a head, a hand, a heart. In one clip, a child visiting the exhibit clapped her hands, causing the globes to drop abruptly to the floor before warily creeping back up, the way a herd of heifers noses up to a hiker. They were beautiful and strange and playful, and although they had no meaning or message you could easily take away, they also had a kind of purpose; they expressed something, even if what that something was couldn't be put into words.

What had they to do with us? We were engineers, mathematicians, coders, developing intelligent mannequins for high-end fashion stores – *shopbots*, Tim's big idea, the idea that had pulled in nearly eighty million dollars in start-up funding over the last three years. What did we need with an artist? We didn't know. But we had long ago learnt not to question Tim's decisions.

He was a visionary, a wunderkind, the whole reason each one of us was at that company in the first place. What Gates was to personal computers, Jobs was to smartphones or Musk was to electric cars, Tim Scott was to AI – or would be, very soon. We idolised him, we feared him, but even those who could not

keep up and had to be let go respected him. And there were many of the latter. Scott Robotics was not just a business. It was a mission, a first-to-market blitzkrieg in a war to mould the future of humanity, and Tim was not so much a CEO as a battlefield commander, charging from the front, our very own Alexander the Great. His gangling physique, rock-star cheekbones and goofy giggle failed to mask his iron determination, a determination he demanded from each of us in turn. Twentyhour days were so common they were barely worth remarking on. The postdocs fresh out of Stanford who were his usual hires felt empowered, rather than exploited, by the insane work ethic. (On which subject, his interview technique was legendary. You were ushered into his cubicle, where he would be working on emails, and waited patiently for him to say – without looking up – 'Go.' That was your cue to pitch why you wanted to work at his company. Assuming you passed, next came what was known as 'The Timbreaker'. Sometimes it was a computational question: 'How many square feet of pizza are eaten in the US each year?' More often, it was philosophical: 'What's the worst thing about humanity?' Or practical: 'Why are manhole covers round?' But mostly it was to do with code. Such as: 'How would you program an artificial politician?' And the answer you were required to give was not just theoretical: Tim expected you to come up with actual lines of working code, one after another, without the use of pen and paper, let alone a computer. If you did well, it was signalled by a single word, delivered in the direction of the emails he was still working on: 'Cool.' If he said quietly, 'That's pretty lame,' you were out.)

His impatience - which was also legendary - was somehow

another aspect of his charisma: proof that the mission was time critical, that every second was precious. He even peed quickly, one employee reported after standing next to him at the urinals. (The employee, meanwhile, was afflicted with pee-shyness.) His speech was even faster – curt, precise, bombarding you with instructions or, occasionally, invective. Senior managers, or those who very badly wanted to be senior managers, were often noted to have picked up a trace of the same clipped London accent, so different from the languid, questioning inflections of Northern California. It was as if he were a force field that buckled those around him. If Tim looked you in the eye and said, 'I need you to go to Mumbai tonight,' you felt exhilarated, because you alone had been given a chance to prove yourself. If Tim said, 'I'm taking over your assignment,' you were crushed.

It was sometimes cultish. Not for nothing were we known in Silicon Valley as 'the Scottbots'. The mission could be refined, but it could not be challenged. The leader might have his foibles, but he could not be wrong. At costume parties – paradoxically, Tim loved costume parties – where most people went as characters from *Star Wars* or *The Matrix*, he went as the Sun King, complete with buckled shoes, frock coat, outsized wig and crown.

His background was another part of the legend. The impoverished childhood; the bullying that made him leave school at eleven to self-educate. The growing interest in chatbots, just at the time when people were starting to interact with e-commerce sites on their smartphones. The creation of Otto, a customer-service bot that, instead of being robotically polite and frustratingly obtuse, was efficient, smart, geeky and cool – not unlike Tim himself, as many commentators remarked. Otto didn't always

spell correctly or use capital letters. He peppered his responses with emojis and witty allusions to nerd culture – quotes from *South Park*, catchphrases from sci-fi films. When you encountered Otto, you were convinced you'd just been put through to some wizard-level teen genius who would fix your problem for the sheer thrill of it. No one was surprised when Google bought Otto for sixty million dollars.

Then, at the age of twenty-three, Tim walked out of Google to found Scott Robotics, taking Mike with him. Their first success – put together in the aforementioned garage – was Voyce, a telephone-helpline bot that was consistently ranked higher than human operators. More successes followed. Tim was obsessed by the idea that AI interactions should be lifelike. 'One day the keyboard and mouse will seem as outdated as punch cards and floppy disks do now' was his mantra, along with, 'You don't change the future without changing the rules.' The shopbots were a daring progression. Nothing like this had been attempted before – an AI that interacted with people physically, in person, without the medium of a screen or phone. But it made good, even brilliant, business sense. High-end retail mannequins already cost tens of thousands of dollars; sales assistants, too, were expensive, given that they often stood around doing nothing, and personal shoppers with a good eye and an exhaustive knowledge of a store's inventory were time consuming to train. Combining the three was a no-brainer. It was a sector ripe for disruption, and Scott Robotics – our tiny band – was going to be the first to disrupt it.

And now we were to have an artist to help us. Had we known, of course, where it would lead – had one of our expert futurologists

been able to predict how things would turn out – we might not have been so sanguine about that. But even if we had known, would we have said anything? Frankly, it was unlikely. It was not the kind of company where you debated the direction of travel.