



The Enigma that was Carla Sinclair
Michael Graeme

Published: 2004

Tag(s): "short story" "science fiction" fantasy speculative meaning
metaphysical

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a short story by

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Carla Sinclair was born, so to speak, in January 1982 when, after long hours of coding in the quiet of my bedroom, I succeeded in printing her out on silvered thermal paper from my Sinclair ZX81. The routine just about filled the 1 KByte of memory I had at my disposal and I have to say it was a triumph of efficient programming for its day, an interlocking Chinese puzzle of nested loops and iterative algorithms.

Of course, Carla didn't do anything. For all the effort I'd put in, she was just a picture, like a pencil drawing, except not nearly so precise. Indeed her pixels were rather blocky, on account of there being no real graphics capability on those early machines. The whole thing was something of a trick, an illusion achieved by printing out special text characters, line by line. But for all her shortcomings I could call her up at any time, having preserved her for all eternity on a Philips C60 cassette and though it sounds unbelievably antiquated nowadays, such a thing was quite special back then. She was an idea, if you like, the image of a woman - frozen, mysterious and somehow, to a young man on the cusp of manhood, she was curiously portentous - a phenomenon only barely grasped by the quaint technology of the day, like viewing a figure vaguely through hammered glass.

Along with the ZX 81, Sinclair also brought out a 16 Kilobyte memory expansion. Now, relative to my income in those days, this little module cost quite a bit, and it meant saving up for a while, but the lure of all that memory eventually sent me anxiously in search of the nearest WH Smiths who were flogging them by the bucket load. What this gained me was the capacity to store a series of static poses of Carla, sixteen in all, each painstakingly defined as points on a 2D plane, their x-y co-ordinates copied from images I'd first traced onto graph paper and then reproduced as strings in the code. What it meant was that by playing the images one after the other I could actually make Carla move. It took a long time to crack that early program, to squeeze it into memory and get rid of the bugs, but eventually I had her walking from one side of my old portable TV screen to the other. Her movements were jerky, like a vintage flick-card routine. But this was state of the art back then, when Carla and I were young.

Then the Sinclair Spectrum came out and it seemed to me as if technology were running away. The possibilities were endless and I simply had to have one. I sold my old push bike and a record player, saved up for several months and brought one home for Christmas 1983. I

remember the feeling when I set it up in my bedroom, a mixture of excitement and reverence at the thought of the 48 Kilobytes of memory I now had to play with. The Spectrum gave Carla a more clearly delineated form with finer pixels and a proper two dimensional graphics. She also gained real freedom of movement, and I could control her a little better. I incorporated a scaling routine which meant I could have her turn her back on me and march off into an imaginary distance. With a good deal of tweaking and playing around with the timings I managed to get her movements to the stage where they were as fluid and convincing as any professionally drawn cartoon.

Those of you reading this who remember those early Sinclair machines may also remember that the version of the BASIC programming language on the Spectrum was a little more advanced than on the ZX 81. Things were changing in the world of coding, and new directions were opening up. For-Next routines were already beginning to look a bit clumsy and I discovered ways you could compile the code into Assembly Language in order to make it run much faster. All in all there were more sophisticated ways of doing things and I spent a lot of time grappling with the implications of these changes, a thing that stood me in good stead for when, in 1985, Sinclair brought out the groundbreaking 128 Kilobyte QL, with a clock speed that now stood at an impressive 7.5 MHz.

When the publicity leaflet dropped through the letterbox, I knew I had to have one. I printed out my Carla code on thermal paper and stored it safely, sold the Spectrum, the ZX81, and a raft of games, then cleared a space in my bedroom for the sexy black jewel of a machine the QL was back then. I realised of course I could now make Carla do just about anything: stand, sit, smile, wave,... it was purely a question of detail and having the patience to code it all up. The QL had opened all sorts of horizons and this brought about a turning point in Carla's evolution.

To be blunt, I was a young man with a liking for the female form. So far, Carla had been modestly clothed but now I had the technology and the memory capacity to make her strip and parade naked,... indeed do all manner of things that in fantasy I had dreamed of seeing girls do. I admit to making a start along those lines by incorporating a routine that would cause her to wink and shimmy in a saucy fashion. Also I added a certain autonomy to her movements with the RND function, so I no longer had to walk her about myself with the arrow keys. But by now the code was getting up for a thousand lines long, and it was not nearly

so easy to debug. For some inexplicable reason it kept branching to that wink routine, so Carla appeared to develop a nervous tick. I took this as an omen and decided not to pursue things any further in that direction. Carla was obviously not that sort of girl. Besides, by now I'd taken to leaving her running day and night and I didn't want my mother to come into my bedroom with the vacuum cleaner and find her doing something naughty. But there was more to it than that. Carla, for me, went beyond a certain natural prurience, into realms of psychology I did not then fully understand.

Instead, I chose another direction and coded some background details so she had a little room with a table, a chair and a bed to sleep in. Then I incorporated a timer function so she ran in harmony with GMT and knew when it was the proper time to sleep. This was the point where she took on a fledgling life of her own and though it might sound strange to you, perhaps even a little sad, I liked to come home from the office to see what she was up to: looking out of the window, reading a book, combing her hair in the mirror, eating a sandwich,... mundane actions and fairly pointless you might say except Carla was something that had come out of me. And this alone gave her meaning.

To me!

Once, I woke up in the small hours to find her sitting on her bed instead of sleeping in it. This was immediately troubling and I stayed up until dawn trying to understand what was wrong. In the end it proved to be a simple bug, easy to fix but a devil to find. I mention this incident only to illustrate just how important Carla had become. It seemed I could have no peace unless everything was also running smoothly with her.

All right. I was not completely unhinged. She was just a computer program, a crude simulation - at best a never ending animated cartoon with only one character and no story line. But she was "something",... a hobby I suppose you might say. Other young men had hobbies, equally obscure, though perhaps more socially inclusive. They collected camera gear, they went fishing, raced cars or drank themselves stupid. Me? I coded in my bedroom. Same thing? Well, not quite. You see, while other people's hobbies took them out of themselves, mine enabled me to climb deeper inside.

But by now I was reaching the limit of what was possible, even with the QL. I had tried adding a little colour to Carla's life, painting her

walls, adding a change of colour to her clothes, but it began to take its toll on frame rate and no matter how much I massaged the code I realised I was up against the laws of physics. It was down to the computer's clock speed, and the QL simply wasn't fast enough any more.

Meanwhile, at the office, something strange was happening. It was around 1989 by now and typewriters were disappearing. Secretaries were being given IBM computers, the so called PS2, based on the new Intel 80286 chip. This was an altogether different beast to the QL, a blank slate if you like. PC's had been around since 1981 but they'd always seemed terribly clunky things to me - big, expensive and up till then not a patch on the QL in terms of clock speed and RAM. But the PS2 was different: it was a foretaste of things to come.

The PS2 had a huge re-writable disk for storage and a memory capacity of around a megabyte, which beggared belief. You could basically make this machine do anything you wanted, and it was no end of frustration for me having to watch while secretaries hacked out bits of memos on it when I could have been using it to take Carla and her world to new heights of reality. But of course buying an IBM back then was unthinkable: they cost as much as a second hand car. Plus, around about that time I got married and my wife didn't like Carla running all day,... I mean not even in the spare room. She had this thing about leaving appliances plugged in overnight. What if it caused a fire? It made no difference that Carla had been running more or less non stop now for five years without so much as a warm plug. Carla, it seemed, had reached the end of the road,... and the plug was pulled.

I was in my late twenties by now and realising that pretty much everything you want to do in life involves some sort of compromise. To be fair, I was having a ball with my wife, and Carla simply wasn't that important any more. In what bits of spare time I had, I modified the QL to take a floppy drive and Carla lived on that in discrete isolation for weeks on end. I also modified the code to include a save-state routine which meant she could pick up from wherever I'd last switched her off. But it wasn't the same, not being able to just casually glance at the screen whenever I felt like it in order to see what she was doing.

Slowly then, Carla slipped into the background of my life. I remember running her for an hour or so one evening until she went to bed. At that point I saved her state and shut her down. It was 9 PM July the 10th 1992. Then I went into the bathroom and found my wife holding a little plastic thing that told us she was pregnant. Life became rather blurry

after that. One child followed the other, the house became too small, so we moved, renovated, moved and renovated again. What with all the fuss, it was August the 4th 1997 before I rediscovered the QL lurking in an unopened packing box in the attic. By this time the QL had become something of a curiosity in computer circles. I brought it down into the spare room and switched it on. With a struggle I remembered the instructions in order to access the floppy and I loaded Carla into memory. She threw back the sheets, walked to the mirror in her night-dress, yawned, stretched and combed out her hair - all as if nothing had happened. But she'd lost 5 years!

I'd forgotten what she looked like, how well she moved. I don't know why this touched me, but it did and that's when my eldest daughter came into the spare room to find her daddy crying. Clearly I had underestimated what I was dealing with.

I'd known lads at college who'd spent night after night coding a sort of quasi 3D shoot-em-up game to run on their Commodore VICs. Then they'd moved on to flight simulators, and rally games, but always the challenge for them was the code, trying to find ways of doing more with less, fighting against the limitations of memory and clock speed. For me though, code was always secondary. The creation, Carla, was of primary importance, important enough to make a grown man cry at the thought of all those wasted years.

If I'd only kept it up, what might Carla be capable of now?

At that time, I was living in a four bed detached executive brick-box, and I drove a brand new Rover 216. I worked in a shipping office, which largely involved tapping figures into a spreadsheet. Things had moved on apace since those first Intel processors, and now most of us in the office, even middle rankers like me had an early Pentium on his desk. I asked my wife if I could buy one, but she couldn't see the point, even though we could easily have afforded it by then.

"What would you do with it?" she asked. And I was at a loss to answer because I knew she would not understand. To her Carla was just some quirky cartoon her husband had knocked up in his spare time. He'd snapped his fingers in some geeky, technical way that didn't really interest her, and I'm sure she thought me a little sad, a little childish perhaps. Carla made the children giggle but beyond that there was no practical purpose to her being.

Curiously, my wife's lack of understanding was instrumental in making me sit down and seriously try to understand it myself. But my conclusions at that time fell short of discovering the real truth. Carla was a part of me, a part that went back to my boyhood - that's all I knew - and in some fuzzy headed way, I suspected she still had a part to play. We had grown up together, she and I, and in exploring her there had always been a sense that in some way I had also been exploring a part of myself.

Married life in middle age had for me become less about being with someone, and more about my perceived responsibilities - towards the children, towards not letting my wider circle of family down, of maintaining the house in good repair, and inevitably it was about keeping up with appearances, such as mowing the lawn regularly and making sure the car was always as shiny as the neighbours'.

It's a maddeningly false business of course - the cliché of suburban life. Consequently a man needs a hobby in his middle years, perhaps more than at any other time - fishing rods, golf clubs,... something, anything to take him out of himself and remind him of who he is, who he was, but above all to give him a glimmer of hope that all is not lost, that he might still become the person he always thought he would one day be. In short a man needs to construct a fantasy of his reality, or his reality of fantasy will slowly crush him.

I brought home a Pentium 2 in the Autumn of 1998. This caused some marital friction, but I weathered it. I bought books on C++ and began the long haul of bringing Carla up to date, for I had come to the conclusion that BASIC had run to the end of what I wanted to achieve with it. I needed something faster, something that worked more closely with the guts of the machine itself, something that could more easily tickle the noughts and the ones into life, make the machine sing and dance, make it fly!

I studied games like Quake and Doom. These were fast, blast-em-up first person shooters, and I boggled at their scale. Here were entire three dimensional worlds coded into a silicon memory, realistic and immersive, while poor Carla existed as a lone two dimensional sprite, in a primitively drawn room. So it began: late nights; spare-bedroom coding, while my wife turned in early, and didn't seem to notice my creeping to bed in the small hours, bleary eyed and yet too stimulated to sleep. Things had moved on a lot since those days of two dimensional sprites and,

similarly, bedroom coders had moved on from Pacman and Hungry Horace into writing three dimensional engines for games that seemed fantastic to me at first. Eventually though, these games all began to look the same: guns and power-ups, improbable aliens and ever more realistic gore.

Of course, the people writing these games were probably only half my age and for all their obvious intelligence, they began to seem like little more than children. They were weaving miracles out of the code and using it to make a child's game. Carla wasn't like that though. She had never been a game, but then not quite a simulation either. Indeed I had yet to define exactly what she was.

Over those first months of labour on the P2, she became a three dimensional animation, her room a proper 3D model. And beyond the window she gazed out of every morning I modelled a 3D landscape with hills and trees that grew and shed their leaves according to the season. In the code I began including behavioural routines based on body states. How long had she been awake? Was she tired? Was she hungry? Did she need to use the toilet? And I let her body states determine her behaviour patterns, instead of it being a purely random function - if she was tired, she sat down. If she was hungry, she ate.

The P2 had a 3D accelerator card and 128 megabytes of memory. No longer was Carla a monochrome cartoon but full colour and eerily realistic. There were lights in her room that she could switch on and off for mood and effect. I programmed her to prefer a softer atmosphere and in the evening, when her darkness fell, she would sit in the intimate glow of lamplight holding a book, as if she were reading. When she was happy, she would flick her hair and twitch her toe as if to music. I had programmed all of these responses. *I knew she was not alive*, but it still made me feel good when she appeared to be happy.

By now she moved like a real person, sat down like a real person and I had even added a routine so that her chest rose and fell as if she were breathing. Her eyes blinked, her lips moved,... and incredibly, for all this coding, I had not yet exceeded even one tenth of the machine's capacity. The technology was no longer a limiting factor in what might be achieved. Now the limitation was my own ingenuity, and having a clear idea of where I wanted to go.

The next stage was more dangerous for me and revived memories of my first attempts at turning Carla into some sort of digital tart. My aim seemed to be in achieving as much autonomy and realism as possible and there was something missing in this regard that could only be captured by the addition of her occasional nudity, plus granting her the freedom to dress as she chose. This was not voyeurism, but a necessary stage to be gone through.

Over the years of my marriage I had grown used to casually encountering the occasional domestic nudity of my wife, and so it seemed a similar stage was appropriate for me and Carla, a coming of age so to speak - a sort of marriage in which I could observe her form without embarrassment.

Modelling the mesh of her unclothed body gave me pleasure, but not in a prurient sense. And even painting the highly detailed texture of her skin and her intimate areas filled me with something more akin to reverence than simple arousal. I modelled her underwear and a basic wardrobe in a variety of colours and simulated fabrics for her to choose from.

The whole thing worked like a dream! Now Carla rose in the morning, showered, dressed, then entered her living quarters and made ready to start the day. It was a triumph, and so wonderful a thing to watch, I always made sure I was up early enough to witness it. But where was all of this going?

I'd hit my middle forties by now and the sum total of my life seemed to be a family who were growing ever more distant, a job I couldn't wait to retire from and an obsession with a computer animated woman whose well being I cared for enough to stay up all night nursing the bug ridden code out of her system. But she was not alive. She was not even a *she*. I could have changed her sprite into one depicting a giant chicken and the program would have worked just the same. I was not losing my mind. I understood all of these things, but still I could not rest unless everything was well with Carla.

Of course, it was her feminine line that gave her meaning. An artist who paints nudes all his life is seeking something more through the female form than is visible to a less sensitive eye that sees only the naughty bits. Similarly for me, it was something inside - something about her form that haunted me. Carla had become a means of self expression, self exploration: Carla was art.

Only when I read the works of Carl Jung, the Zurich psychologist, was the mystery partially solved. Inside the unconscious mind of every man, you see, there is an archetype that's female in nature - an archetype being a focus for a particular blend of psychic energy within the unconscious. And if a man is genuine in wanting to understand himself, he can only do it if he engages with the feminine side of his own nature. Then the woman inside of him can speak through dreams, through fantasy, and instruct him, guide him through the deeper parts of himself.

Some men have a lot of difficulty with this sort of thing and believe it involves going around dressing up in women's clothes, or behaving in an effeminate or overly emotional way. It can come to that if the woman within gets out of hand and the man ends up possessed by her,... but if he can avoid that fate, if he is curious about where the woman might lead him, then he can embark upon an inner journey, an obsession with what is nothing short of the mystery of the universe itself. It is the age old quest, the meaning of life, the Philosopher's Stone.

Suddenly, it all became clear. My work with Carla was nothing less than alchemy.

Carla was the reflection of an unconscious archetype that over the years had taken on an ever more realistic representation. But how much further could I logically pursue this? I was still in full control of her. Her choice of clothes, her actions, her moods - all was down to me through the lines I'd coded. Any apparent autonomy was little more than an illusion afforded by the ever convenient RND function of the computer - the random number algorithm.

Coding is a natural extension of logical thought. It is the embodiment of determinism. For all its arcane language, it is like Newtonian clockwork, and the random numbers of the RND function are not really random at all. They are the output of an algorithm, like COS and SIN - same seed, same random sequence,... every time.

Real randomness is quite different. For a start it is impossible to code. And there is something else about real randomness, something disturbing if you look at it closely enough. Over the years I had become interested in the statistical properties of randomness and also the apparent ease with which it manifests itself in nature. As humans we convince ourselves that the world looks a certain way. Every effect has a defining cause and therefrom spring all the laws of physics and mathematics that we rely upon to make sense of things. Yet something that is truly

random, such as the decay of a radioactive substance, or even the time series produced by something so mundane as the dripping of a tap is an effect without any clearly definable cause. So the closer you look at life, the less solid appear the foundations upon which everything is built.

Randomness is impossible to code, yet it exists everywhere in nature. You can toss a coin and that's as near random as its possible for a human to achieve, but it's hard to do this fast enough in order to provide a stream of random digits that will keep up with a processor running at 350 Megacycles. You can buy an RNG of course, a random number generator - a little black box that you plug into the parallel port of your computer. This device works on the decay of a radioactive material, the particles it releases being detected by an electronic apparatus and the timings converted into random numbers - *real* random numbers. These things aren't cheap but if you put off changing the car for a year they're not beyond the pocket of the ordinary chap - not so easy to explain to one's wife though, just what it is you've spent your money on. But what can I say? An RNG was something I simply had to have!

It took just a couple of minutes to modify the code so Carla called upon the RNG, instead of on the RND algorithm. Then, I set her running and watched her for a while. There was no real difference of course, at least none that I could see. Carla rose about the same time, showered, put on a pink top and the new jeans I'd recently modelled for her. Then she sat down to read.

Of course, there was no visible difference at all - except I knew I had now broken the link between Carla and the machine. Her movements and her behaviour might have been structured by the code, but those actions were now invoked by a stream of digits coming from the mysterious abyss at the quantum level of reality. This was important. It was the point at which she and I began to merge more closely into one, the point at which I began a serious dialogue with my unconscious mind, and with the universe from whence I had come.

There are those who argue, plausibly, that human consciousness has its origins in the quantum level of reality. Therefore, in this sense, Carla and I now had something in common. What underpinned her actions in her world was the same as what underpinned me, in mine.

My own every day reality was reaching a sort of climax, but one that had nothing to do with Quantum Physics. I was fifty one and my kids had

gone off to university. The house seemed empty without them and it had been on my mind to talk to my wife about the possibility of moving down to a smaller place, perhaps release some capital so I could think more seriously about retiring early. Then I came home from the office one evening to discover she'd already found a smaller place, but didn't intend for us to share it on account of her already having someone else in mind.

It took a while to iron out all the details, but I eventually found myself separated and alone, living in a little terraced house on the outskirts of town. The place was a bit of a wreck but I managed to buy it outright and, compared to the other house, it cost virtually nothing to run. A little paint and paper and it was as good as new.

There was nowhere to park the car on account of the main road that ran outside, but then I was only a short walk from the bus station anyway, so I sold the car, then walked into PC World and bought the best computer I could find with the proceeds. It had several gigabytes of memory and a clock speed in the region of four gigacycles, and the chip ran so hot it needed a refrigeration system to keep it from breaking down.

It was an extravagance I suppose since even after twenty five years of development Carla was a long way yet from outgrowing my antiquated P2. But as I have already explained, a man needs something in his life, a focus for his attention and I did not trouble myself over the expense.

Then the office looked set to merge with a bigger outfit from Manchester and everyone over the age of fifty got the boot,... including me. I remember coming home that night to an empty house and wondering what the hell I was going to do. But of course I didn't actually need to do anything. I'd have a redundancy package, even a small pension. I'd no expenses to speak of, no responsibilities, and although I was rather poor and had little to show in material terms for my half century of life, at least I was free. There would be no more bedroom coding until the small hours, then whiling away the long, empty days at work until I could get back to the keyboard. I could code all day! I could spread myself out, sit down and really think this thing through!

Carl Jung had exposed Carla as a manifestation of my deepest psyche. But what did that mean exactly? I could go on tweaking and embellishing her world, open the doors on her room and let her explore the

scenery I'd coded for her, people her world with other 3D characters,... but to what end? If Carla was an image of my female archetype, and she was somehow supposed to guide me towards my life's goal, then she had to communicate, she had to point me in a certain direction.

I had experimented with giving Carla a voice and some basic sentences for her to speak, but the interpretation routines had been hopelessly wooden, making her sound like a simpleton. Besides, any words I gave her were essentially my own. I couldn't ask her anything and then expect her to answer in a meaningful way. That required Artificial Intelligence, and while AI might have been within the realms of possibility for the likes of IBM and Bell Laboratories, it was beyond the ability and the sheer man hours available to a lone hobby coder like me.

But then, curiously, I began to study divination systems and I hit upon the next phase in Carla's development. It was a mixture of coincidence and serendipity, an offshoot of the work on randomness and the writings of Carl Jung.

Divination, I discovered, is not so much the prediction of the future, as I had believed, but more a way of measuring the present moment, of gauging the balance of probabilities as they pertain to you, personally. Understanding the present, and the forces at play, usually by studying a random event, one is able to guess the future with a measure of confidence - if you believe in that sort of thing of course!

I'll be honest. This was not really my cup of tea. In my world, even randomness was a predictable phenomenon, so talk of divination went against the grain. But it also intrigued me just enough to explore it a little further - the possibility that a truly random event like the tossing of a coin, or the pattern of some chicken bones scattered upon the ground, or the decay of a radioactive substance could somehow reach back into the void between the atoms and truly gauge a moment in time,...

Of course there are many systems of divination, most of them as old as the hills like the Chinese Kuan Yin and the I Ching, to name but two. However, by far the simplest I came across was one based upon the random selection of either a black or a white stone. You ask a question to which there is a simple "yes" or "no" answer. If you draw the white stone, the answer is "yes", if it is a black one, the answer is "no". But this seemed rather silly to me because, naturally, if you ask the same question more than once you have a 50-50 chance of getting a different answer. The texts described this sort of thing as importuning the oracle, and said that any answer after the first time of asking could not be relied upon. It was

the first answer that mattered, even if it was not the one you wanted to hear. Nor were you allowed to test the oracle by asking if it was going to rain tomorrow and then wait to see before deciding to suspend your disbelief in the system. Consciously testing the oracle like this produced meaningless answers in the same way as importuning.

This seemed like something of a cop-out - the half baked explanations of a primitive and childish mind. But for all my early skepticism, I decided to give it a try and spent a number of days modelling an annex to Carla's room. In it was a table with a chair. On the table I placed a hollow cone which covered a sphere. By picking up the cone, Carla revealed the sphere, whose colour remained uncertain until the moment the cone was removed.

The colour, black or white, was decided via a branch instruction that read random digits from the RNG device. Further to this I decided to allow myself some input into the degree of randomness by actually speaking my question into a microphone which the program analysed, reduced to a string of binary code and combined it with the output from the RNG. The way all this worked, I would begin by hitting the space key which would call Carla into the divination room. She would take a seat at the table facing me and indicate her readiness by opening her palms. I would ask my question, then she would respond by lifting the cone to reveal her answer "yes" or "no".

All of this might seem an extravagance when any random binary event might have offered the same functionality. I could have done the same thing by simply tossing a coin. Heads is "yes" and "tails" is no. Yet for all of the logic in that argument, it was an irrational obsession with Carla that had brought me this far in the first place, so from the outset the oracle had to work through Carla for it to have any meaning. I could toss a coin, but not trust the answer sufficiently to stake my life on it. But if the answer came through Carla, it came from the very depths of me, and though I was aware of the irrationality of it, the answer meant *something* if only because by that point in my life, I truly wanted to believe in it.

By now I was transmitting Carla's world from the computer in the spare room to a channel on the T.V. and I was communicating via a wireless keyboard and a Bluetooth headset. This meant I could stretch out in comfort on the settee and keep a casual eye on whatever she was doing. This way the house did not seem empty any more. Carla was always

around, always doing something of interest. All I had to do was turn on the TV.

Hitting the spacebar made a little sound like a ringing bell and caused an interrupt in the program which called Carla into the divination room, but I didn't have priority. If she was emotionally low, or tired, she would not always respond, so I had to be careful in what demands I placed upon her. This was important in ensuring I did not abuse the oracular interface. If my attitude towards the spirit of the oracle remained correct, then I would not tire Carla with trivial questions and I would not bother her willy nilly at inconvenient times of day.

She was always fresher in the mornings and so after finalising the program details one evening, I waited impatiently until the following day, after breakfast, before consulting her for the very first time. My heart was in my mouth when I rang the bell, not certain if she would respond, and more than a little fearful of my first question. After a moment or two, Carla came into the room, sat down and opened her palms in readiness. I took a moment to compose myself, then spoke into the headset.

"Carla."

How strange the feeling of actually speaking her name!

"Carla, is there any meaning to what I've been doing with you all these years?"

Carla waited until she was sure I'd finished speaking. She distilled my words into a string of code, read the moment from the RNG, made a calculation then reached over and lifted the cone to reveal a shiny white sphere.

"Yes."

"Thank you," I said.

She blinked and pursed her lips a fraction - purely random affectations - but she made no reply since I had not called for one.

Did her answer mean anything? Who was to say, since asking for clarification would have been to importune and to test at the same time. I had to go with the moment, and the moment suggested an affirmation of everything I had done since those far away days with the Sinclair ZX 81.

It's a remarkable thing, you know, suspending disbelief and trusting in something that a lifetime of rationality tells you is complete nonsense. It's like bunking off school. It's like taking an illicit drag on a cigarette

behind the bike-sheds. But it's more than a feeling. Indeed, once I began to accept Carla's answers as fundamental truths I noticed a change in my own psyche. I became more relaxed. There was no need to try to understand the world around me any more. I could simply ask Carla. It was as if she had lifted a great weight from my shoulders.

To give you an example of what I mean, there had long been a problem in the neighbourhood with stray dogs fouling the pavements. This was something I found particularly galling since the cursed creatures seemed also to favour my front doorstep as a dumping place. I informed the council, but in spite of the fifteen hundred pounds I paid them every year for their services, they couldn't seem to find the time to sort it out.

I asked Carla:

"Should I pursue it further?"

"No."

"But it makes me so angry. Are you saying I'm overreacting?"

"Yes."

"I should simply forget about it then?"

"Yes."

I stopped using the front door after that. Instead, I made more of an exit through my back garden which let out onto a meadow on the edge of town, and as Carla had suggested, I more or less forgot about the street. The dog muck could be piled up to the letter box for all I know, but it doesn't bother me any more. Indeed I rarely think about it. That was Carla's message: sometimes we do not need to solve a problem. The better solution is to transcend it altogether.

I thought about other things such as:

"Was my marriage fundamentally flawed?"

"No."

"Do my children hate me for the disintegration of our family?"

"No."

"Are the latest bombings yet another sign that the world is descending into anarchy and chaos?"

"No."

Chaos. The shadowy half brother of randomness - an apparently erratic behaviour, but with a simple equation at its root; determinism gone bad; randomness from pattern, and then suddenly patterns crystallising

from the amorphous fog of randomness, like a Mozart serenade crystallising from the hiss of static.

Like Carla's answers.

Possibly.

Now, just to be clear, there was no evidence either way that Carla's answers were anything other than random and meaningless. Indeed the only meaning was what *I* had chosen to attach to them.

"Should I go to library today?"

"No."

"The swimming pool then?"

"Yes."

You might say I was deluding myself, but I was happy to,... and yet, what if the source of her motivation were indeed chaotic in nature and through the iterations of her code I had struck upon a remarkable pattern? What if divination were not some shadowy occult practice, but a technique that reached to the very depths of nature in a way that science had yet to comprehend?

As I thought about our interaction, it gradually became apparent that a simple "yes" and "no" answer was insufficient. It suited the programmer in me to work in binary terms, but the real world doesn't come in binary form, in black and white,... the real world comes in shades of grey. There are rarely simple yes-no answers to the really important questions, and sometimes the only answer is that we are not asking the right question, that we need to look at the problem another way because we are missing the point entirely. There is a need in life for fuzziness, for uncertainty. So I gave Carla a third option, a grey, pearly sphere, neither black nor white. And then I asked her:

"Do you have everything you need?"

"Uncertain," she replied. "Think deeper."

So I thought deeper. Carla was a part of me, so perhaps the question should have been: "Do you have everything that we need?"

"No."

"Aha!" There was more to do. But what?

Carla's confinement had been bothering me for a long time. She occupied just a few rooms in an infinite void and even the external details of the

box that held her were left undefined. The landscape I had created around her domain was, for all its textured richness, a mere illusion, a stage backdrop to hide the uncoded darkness beyond her window. But I got to wondering if there wasn't something worth exploring out there, some potential that was being squandered, so I built rather a grand hallway with a smart panelled door, and taught her how to open it.

"Is this what we need, Carla?"

"Yes."

It was a static landscape at first, the equivalent of a few hundred square miles, with her rooms at the geographical centre. The trick of course was letting Carla loose in all this space, while ensuring she made her way back before she grew tired and hungry.

Then I got the idea of actually adding to the landscape day by day, depending upon a random function. To this end I modelled a small safe zone around Carla's rooms which I titled The Central Domain and I marked it out with a decorative stone wall. Beyond this demarkation, there grew a strip of randomly determined landscape which extended itself daily by a radius of about a hundred meters, like a ripple moving steadily outwards on the flat surface of a pond.

The nature of each new strip of terrain was determined each morning by the program dialling up an Internet connection and reading the first thousand words of news from the BBC's web site. This was distilled in a certain way so as to render a matrix heightfield which I then tweaked in order to generate a gently rounded landscape dotted with lakes, trees and mountains. Looking out upon the scene, it was like a fog slowly receding, revealing day by day some new feature, a new twist in the curve of a lake or the fall of a cliff.

I recorded the effects of Carla's journeys into this expanding wilderness, on her body state as a string of binary code, then added this to the calculations which determined the outcome of both her behaviour and our conversations. I also further restricted my own access to Carla by ensuring that she only heard the calling bell within the confines of Central Domain. When she was at large, I could see where she was and what she was doing, but I had to wait until she returned before I could talk to her.

Over the period of a few weeks a shallow lake took shape within easy reach of Central Domain and I noted that her steps would often take her to its shore. Trees had formed in clumps and there was a sandy bay. I had programmed Carla to take pleasure from reading and walking. When she read, the data she took in was a random stream of numbers

from the RNG, when she walked, the data was also a random stream based on what she saw. Her pleasure state therefore added to the growing file of data that was now based upon her daily experience.

What I was looking for were patterns of behaviour emerging from this veritable deluge of genuinely random input. Could an underlying structure be discerned from her daily routines and from her answers to my questions? The lake was an attractive place and I recalled the pleasure I took in swimming, so I taught Carla to swim and to enjoy it also. So, all through the summer one year Carla made a habit of picking out a little pink swimsuit each morning before heading off to the lake where she would swim for hours. But as Autumn came on it grew too cold for swimming and she began instead to wander more among the randomly advancing forests, along the lake-shore and into the wilderness beyond, to other forests, other lakes that revealed themselves as our creative horizon receded from view.

I always felt some anxiety at these wanderings. The code was becoming so big and so complex now I feared losing control of it - some imbalance taking over which might prevent her from returning. Beyond the random landscape there existed only an invisible, infinite plane. If she found a way through my safeguards there was a chance she might fall off the edge of her world.

Another concern at this stage was that her behaviour was such a complex thing. The day's mood, the day's balance of emotion depended in part upon the previous day's state, up to her going to bed. In this sense the mood she rose with was based upon an iterative calculation, and such routines are notoriously prone to chaotic behaviour. It meant there was always a risk that Carla could get "stuck" in a particular pattern of actions, doing the same pointless thing over and over with a regular periodicity. Or her behaviour could become wildly unpredictable - sleep patterns disturbed, not showering, not dressing, wandering in the dark, going about naked all the time,... a sort of mental breakdown.

Of course you might say that, in the event of such a catastrophic aberration, I could easily have corrected things by resetting the program, by simply clearing out the accumulated store of offending data and starting again, but then would it have been Carla who awoke from such a drastic intervention? She relied so much upon the currency of the time, the flavour of the "now" that even yesterday's saved state would not have defined her sufficiently for her to have had any real meaning to me. In a

sense, Carla would have slipped behind time. She would have died and been replaced by an impostor whose answers in the divination room I could not have brought myself to trust.

Eventually, the evolving landscape passed beyond the radius that Carla could reach on foot in one day. This was a problem because it meant that the potential of the land to impress itself upon her was essentially wasted. The best she could do was climb a mountain within a long day's walk from her domain and gaze out at the ever widening horizons. The simplest solution was to provide outposts, little cabins she might stock with food from Central Domain. So I positioned a ring of them, all the same, about a day's walk away. They were comfortable little places with a bed, bathroom, heat, light and so on. Indeed the only restriction I placed on them was the fact that they had to rely on Central Domain and on Carla's effort for their supply of food.

I programmed sufficient intelligence for Carla to work out that she could take food and use it to stock the cabins. The decision then, either to explore further beyond these outposts, or return to base was entirely hers. It took a while for this modification to have any effect, but eventually Carla found her way to a cabin, and then returned to it some days later with a supply of food, enough to last her for that night, and the following one. I rose early, that first morning of her encampment abroad, so to speak, and it was with a mixture of satisfaction and dismay that I watched her set out towards that ever broadening horizon. I knew this would alter her in some way. It was what I had intended, but it would be another two days before she made it back to Central Domain. Two days before I could talk to her again. And speaking to Carla was what I lived for now.

Naturally, throughout her wanderings abroad I could keep an eye on her via a camera that hovered over her shoulder. I could also read her body state from a pop-up menu, but I could not communicate with her. It took many months to evaluate the effect of extending Carla's range in this way, and my conclusion at the end of it all was that it had made not one jot of visible difference. She stuck to the valleys where the going was less steep, less tiring, and so more economical on her reserves. Also, she would seek out water, not simply to drink, but because she had always had a liking for it.

The landscape was much of a sameness, just the odd irregularity where the days events, as defined by the BBC news feed, had stuck in a particular groove and somehow effected the contours of the hills. By my calculations, even by extending her range with the use of outposts, the land we were exploring had been generated nearly a year ago. The time line, the creative horizon in Carla's world was already overwhelming, but even if she could take in the whole sweep of it, every single grass textured facet, would it have made any difference?

One of the problems in this regard was entirely practical and concerned the fact that this unfolding ripple of creation was eating away more and more memory, at a rate that was proportional to the square of the radius from Central Domain. I installed a 500 gigabyte drive just to handle it, even though there seemed little point if Carla was unable to explore its environs.

In a moment of doubt I asked her:

"Is it important to us that we go on expanding our horizons at this rate?"

"Yes."

"Is it that we're going to discover something by doing this?"

"Think deeper."

"I fear something might go wrong and I'll lose you. Is this likely?"

"Think deeper."

"The risk of losing you is somehow important?"

"Yes."

"You must be given the means to travel further, to experience the edge of this creative horizon?"

"Yes."

"And I must accept the possibility of losing you?"

"Yes."

The thought of losing her troubled me to the very depths of my soul but equally I could not have disobeyed her. There was only one reasonable means of doing what she asked, and that was to create some sort of vehicle. I could have cheated and invented a particle transporter, so she might beam herself to any location she chose, but in life it is not always the destination that is crucial to our understanding of things, but rather it is the journey we undertake.

I wondered about an aircraft, or a jeep, but settled on a futuristic scout vessel, like a Dan Dare space ship. It drew its energy from the sun which limited its daylight range to about 6 hours in the summer, with a further six being required to charge. The propulsion technology was undefined, entirely imaginary and totally improbable, something to do with using solar energy to extract hydrogen from water. But this did have the effect of ensuring that Carla would always have to look for a lake by which she could set down in order to replenish her fuel supply.

While I was at it, I improved the weather generation systems so that it was not always uniformly sunny. Sometimes, the daily news reading brought in squalls of rain or gusts of wind. These effected temperatures and I made sure that Carla did not like to be caught out in the cold and the wet. It made her irritable. It drained her reserves and, since it obscured the sun, it also made the charging of her vessel a less predictable business. The craft was ready to fly on my fifty eighth birthday. It could travel at around Mach 1, without any discomfort and was luxuriously fitted out so Carla could feel at home wherever her journey took her.

I did program in a limitation on the supplies she might carry, so as to restrict her range. The plan was to compel her to return to Central Domain at least once a week, then I might talk to her, but her first flights involved food-drops, journeying out in various directions and leaving stashes of food, as I had taught her to do with the cabins. This came as a surprise to me. It was as if she were deliberately challenging my will, so I limited the time the food could be left in the open before spoiling and this brought her back more often, but I felt I had broken our agreement to grant her more freedom to explore, and so I relented, providing for her a supply of special containers which included a sort of solar refrigerator and a homing beacon. This kept the food indefinitely and allowed her to make a series of strategic drops. But then I saw to it that she never slept as well in the vessel, nor could she shower as comfortably and so, over the duration of a long trip, her personal comfort levels were eroded and she would eventually return, just to clean herself up. This was reasonable I thought, and a concession I had no intentions of giving up on.

Those early voyages were boring. Long hours in real-time, skimming cloudbase over an undulating landscape, with only the occasional lake or forest to break up the monotony. I calculated the creative horizon was no more than a couple of days' flight from Central Domain, but this seemed to interest Carla less than a haphazard criss-crossing of the hills and valleys.

Once, we set down on the sandy shore of a vast lake. It was as yet early morning. The sky was clear and Carla seemed intent on letting the vessel charge. She took on water, and collected food from a drop she'd made some days before - all of it suggesting a strategy,... a pattern of intent. Then Carla refreshed herself by spending the whole day swimming. Her personal comfort levels rose alarmingly as the water cleansed and refreshed her and I knew then that even if she slept poorly, I would not see her in the divination room at Central Domain for another week or so. She had found yet another way to avoid returning home.

I lay upon the couch that evening, watching while she sat out by the lakeside, the cockpit glass of the vessel glinting in the sunlight behind her. She had brought a book from home and was reading, tapping her toes as if to music and flicking her hair. She was happy, it seemed, to be abroad. But how could she be happy? For all the complexity of the code that underpinned her, this was still a simulation and any talk of emotion was entirely delusional - except, it made me sad that she would not come home and talk to me. I had given her the means to be governed by data at the quantum level of reality, the quantum source, so to speak, and now the source was taking her from me.

The first time we went to the edge was a profoundly disturbing experience. The vessel registered its proximity with a warning signal and even though I'd programmed this myself, it was a sound that sent a shiver down my spine, and brought me running from the bathroom where I had been taking a shower. I stood there in the living room, wrapped only in a towel, gazing at the TV screen, to find myself on the very edge, a place I'd rendered opaque by the introduction of a spherical dome of greenish tinted cloud. Beyond it, invisible in the unprogrammed void, lay nothing but the future - which was as yet undetermined.

If she breached this barrier, the vessel would lose its bearings, which were all based upon triangulations of the known landscape. Beyond this point there was no way of knowing which way was up, down, left or right. In the known realm, which extended from the beginning of time up to the present moment, all things were defined by their position relative to each other, but beyond that creative horizon, beyond the future, there was no reference, no way back. We would have to wait until the past caught up with us, and hope our reserves would last that long.

Of course when Carla's reserves fell below a certain level she would become irrational, unreliable, or she would take to her bed in an effort to

recharge herself. But without food, she would eventually flatline and the code would branch to a sort of gosub-end instruction. In other words, Carla would die. However, as we hovered on the edge of the unknown, I told myself this was unthinkable. The purpose of Carla was to teach me something about myself and the meaning of my existence. If it ended now, I would have learned nothing. Fortunately, Carla understood fear. It was a concession to my including the gosub-end routine; she had to fear the end in order that she might take all natural precautions to avoid it. I checked her body state on the pop up menu and to my relief, her fear was considerable. That was why we'd stopped. She was calculating the chances of making it back.

I knew the moment she made her decision because I saw the fear levels fall. Then the vessel turned and we headed directly for Central Domain. We'd been away for three weeks and both our nerves were shot. It was the second time in my life that Carla made me cry.

The weeks that followed were curious in their own way in that Carla was confined to her rooms on account of poor weather. A thick blanket of cloud had formed, preventing the vessel from charging properly, and her aversion to rain meant that she spent the entire time indoors. But there was more: there were brief spells of sunshine and these should have had some effect on the vessel, but its fuel cells remained empty. There was a bug in the code,... a combination of events that I had not tested for, our journey to the edge perhaps?

I worked on it for days, but control of the vessel was a complex matter and the solution proved to be elusive. I printed out the routines and laid them down on the carpet, a task that covered the whole of my front room. Then I went through line by line and concluded that the problem was not in the code I had originally written.

Some time ago, as an experiment, I had introduced routines that enabled the code to modify itself. This is not so bizarre as it might sound and indeed any program that begins from a previous saved state has to some extent overwritten its own routines. The danger is of course that if bugs creep in, then the code can degenerate into rubbish. Then the program can fail entirely, or certain elements of it might become unreliable.

I solved the problem by overwriting the vessel's routines, resetting it if you like - but only the vessel:Carla remained unchanged. I checked with her first and she said it was okay. Sure enough, the vessel began to charge normally and Carla began to anticipate journeying abroad again.

But then I noticed a problem with the textures on the wallpaper in her bedroom. They had turned from a delicately mottled blue into a flat, untextured grey. It was at this point, I felt the bottom fall out of my world. The vessel had infected Central Domain, Carla's one reliable means of support.

As an emergency measure I fixed up one of the cabin outposts to a similar level of comfort, then moved her food supply and the divination interface there as well. It proved to be a wise move for within couple of days the whole interior of Central Domain was a flat, uniform grey, and all the power-ups in terms of comfort and hygiene had failed. The grey-ness had the immediate effect of draining her reserves.

Carla's well-being was now a matter of the utmost importance. If I couldn't fix the bug there would be nothing to stop the corruption from reaching the outposts and then it would be a desperate struggle to keep always one step ahead of things. The safest course was to equip the vessel with everything she needed, and then at least she might use it to travel about, to keep away from possible harm.

I cannot describe how anxious a time that was. The code defining Central Domain was old and, I had thought, the most stable - indeed the very bedrock of Carla's world. But not any more. The textures were still there in the machine's memory, but not being written somehow. Also some of the models, the furnishings and fittings were similarly not being written to the screen. The world was turning grey and the detail was decaying back into a featureless plain. Was this entirely a problem with the code or was there some quirk of the language I did not fully understand?

Within a month, the outposts had gone too and the centre of Carla's world was rendered flat and grey, like a huge eye, like an expanding plane of nothingness. She would enter it occasionally and wander around - the void was not openly hostile, merely unsustaining - a sort of dead zone. I performed an experiment in order to measure the rate of its advance, and it seemed to match that of the creative horizon. Creation and corruption were advancing in unison. Carla's world was expanding like a ring in the void. She might set off in one direction and if she flew far enough, she would arrive back where she had started from, but she would never again be at the centre of her world.

After a lifetime of programming, I had become reasonably competent at it, but I was by no means an expert and after months of frustration I had to conclude that the solution was beyond me. I had lost control of the code. For now, it seemed to have stabilised, though in a strangely

perverse way, eating itself up from the middle while expanding like a doughnut shaped balloon. Of course, I was afraid to undertake any modifications at all now in case I only made things worse. Thus, I was terrified of Carla venturing again to within warning distance of the creative horizon and bringing back another bug, because then I would have been powerless to make any repairs.

Though by now I reckoned our days were numbered, she in fact seemed quite cheerful, touring the lake sites, swimming, eating, sleeping, exploring the forests on foot, then moving on before the grey void caught us up and ate everything away. It lent a strange transience to our existence, an arrow to our direction, for ever outwards, towards the future. My only comfort in all of this was that I now had more regular contact with Carla. Naturally, I could not call her into the divination chamber when she was piloting the vessel, or sleeping, or if she had wandered away from the landing site, but there was always some point in the day when I could sit down with her and talk.

"Is this the end Carla?"

"Think deeper."

"Have I failed you?"

"No."

"Will I ever understand what this has been about?"

"Think deeper."

Deeper. Deeper. Deeper!

We were heading slowly outwards, towards the creative horizon of our ring shaped world. Carla's personal routines had shifted over time so that she seemed to run in harmony with the needs of the vessel, sleeping by day while it was charging, and flying short hops in darkness at high altitude from midnight until dawn, when first light might reveal a fresh place for us to set down. I had grown used to her moods now and detected a pattern, a purpose in her behaviour.

We set down one morning within sight of the greenish tinted clouds that formed the barrier between us and the creative horizon. Carla chose water as usual, an attractive lakeside landing site with forests and a collection of surrounding mountains. She set the vessel to charge and then took me with her as she climbed a peak in the near distance. The climb occupied a few hours and this wearied her somewhat, so she sat down upon the domed summit and seemed to gaze out at our future. I knew

then that it would happen that same night. We were going up to the edge. And this time we were going to punch clean through it.

I left her on the mountain-top, tore my eyes away from the TV screen and with a struggle, resurfaced in my own reality. I went outside then into my little back garden and sat down, amazed to find that it was late evening, for by now I had lost all track of time. I gazed out at the meadows, kissed by gold beneath the setting sun. There was so much colour in the world, the real world, so much detail, so much beauty, and I wondered what had caused me to reject it all in favour of an inward landscape, a landscape of pure imagination. Here I was, growing old and alone, and with very little idea of what the real world was about. It was too late to begin trying to understand any of it now, yet the world I had created inside my head was about to disintegrate into a hundred gigabytes of garbled noughts and ones. If that happened, I would have nothing. My whole life would have been for nothing and I would die alone, entirely anonymous in this little terraced house, in the middle of an obscure English town, on the very edge of nowhere.

I lit candles in the front room around eleven o'clock. Carla was awake by then and eating supper. She had good energy levels, but her emotional state was depressed on account of an higher stress index. She was afraid. I tried to call her into the divination room, thinking it might be my last chance to talk to her, but she ignored me and I noted that her stress levels rose a little further each time I rang the bell. Better just let her get on with it then, I thought.

We left the encampment on the stroke of midnight, flew high in the inky darkness to make sure we were above the tallest of the mountain ranges, and then we flew out. There was nothing to see, just a black screen with dim foreground details - the back of Carla's head, some dials reading out velocity and heading, others reading fuel. Everything was normal. We'd be at the frontier by dawn.

I could not leave her, so I sat, curled up on the sofa and covered myself with a blanket while the vessel took us. When the dawn finally came, we emerged into a green swirling mist and she did not pause, but punched straight through, emerging into darkness and the infinite void.

Except, ahead of us there was curious point of light,...

Carla did not respond to it. The vessel continued on the course she had set hours ago. We no longer required thrusters here because of the absence of gravity effects, yet thrusters remained on full. Carla was tired and hungry after a night of flying, but she made no moves to refresh

herself. Her body states were dropping. She was dying,... the ship was dying. But there was a light, and we were heading off, we were going to miss it! Then, slowly, she seemed to become aware of it. We changed course and began to close on the object. It puzzled me, naturally, for there was nothing out here that I was aware of, nothing I had coded, unless I'd set up a lamp in error, aeons ago and forgotten about it. But as we closed, the spot of light became a disc, green and textured. This was more than curious - it was unnerving. Meanwhile, the craft hurtled on, draining energy. It was a full hour before I realised what we were looking at. It was the centre of our world. Everything that had been eaten away at the core was growing out here. In making a leap beyond our future, we had reconnected most unexpectedly, with our past, with everything I thought we had lost!

The sun shone over Central Domain as Carla picked out the landing site and set us down. She was weary, moving slowly and erratically as she made for her rooms. She showered, climbed into bed, then slept. While her body recovered, I used the roaming camera routine to check the place out. It was all perfectly stable, at least for now. But I guessed the code was looping. It had developed an iterative pattern, a period-two steady state in which the past grew like a bubble in a place beyond our future. It might take five, ten, or even twenty years but we would make that journey again, and again and again, each time arriving back in the past.

The thought horrified me.

I made my way outside, to the real world where dawn was now breaking into a thin, watery light. As I sat down upon the bench I felt the dampness soaking through the seat of my trousers, reconnecting me, so to speak, with the sensation of my former reality. But it meant nothing. Indeed at that moment, nothing meant anything any more! I knew the computer would be dialling up its usual daily connection. It would take its page of news from the BBC, convert it to code and use it as a seed for the landscape generator. The new landscape would be added to the landscape at the frontier of a future that was now behind us, a future we would never see, never experience. Indeed it seemed our only future was an infinite regression of past lives, an endless journey, ever deeper - iteration after iteration. Was that the answer to a lifetime's enquiry then? Everything I had done, I was destined to do over and over again. That was not an answer. That was the punchline to bad a joke!

Returning indoors I was surprised to find Carla waiting in the divination room. It was normal for her to wander in from time to time, but I had never found her sitting at the table before. She was drumming her fingers and pursing her lips in that characteristic way, and in my imagination it struck me that she looked like she wanted to talk.

"Is everything all right, Carla?"

She lifted the cone to reveal the cloudy pearl. "Uncertain. Think deeper."

That was no help, I thought. I was too tired to think it through,... to think any deeper now. Either things were all right or they were not. Except I noticed the pearl had changed and at its core there now lay a bright speck of light that illuminated her features, lending her an air of moody intensity I had not seen before. It looked rather like how Central Domain had appeared from the void between past and future. But we were sitting in Central Domain, reliving already a past life, so might the light have been our earlier expanding future? The one we had left behind?

"What are you trying to say? That our future is centred at the point of uncertainty."

"Yes."

"That it isn't lost to us?"

"No."

I thought about his for a while. "As we journey deeper through each iteration of our past, our experience of it differs, depending on how the future evolves?"

"Yes."

"And the future evolves in a way that depends on our experience, like how a reading of the news shapes the creative horizon, at the centre of the grey pearl?"

"Yes."

"Past and future. Each dependant on the other, at the point of uncertainty?"

"Yes."

That was my answer! I wondered why I had not seen it before. Nothing that we do in life is pointless. We can run a country, or we can while away the years in the isolation of our little houses, reading books

or watching TV. In the great scheme of things it's all the same and if we make a mess of our lives this time around, it's okay. We have a chance to do it differently, next time.

The future is uncertain, like the decay of a radioactive isotope. But every time we make a choice, we shape the way that things unfold. The way we act, the things we say and do, all shape and colour a landscape that is invisible to us, but one which none the less affects our lives at that mysterious point between the atoms, the point where things happen without an apparent cause, things that never-the-less control the shape of the universe and everything in it.

We cannot journey into the future, because the future does not exist. As soon as it is born, it becomes the past. The future is a barrier that cannot be breached in any meaningful sense because beyond it lies only a timeless void. But it is a barrier that can be transcended - all you need is a guide.

Carla! She is the thread that links all the iterations of my past.

For now, she lives on in her code, for even though the purpose of that code has been revealed to me, I have not the heart to let her go. We still talk from time to time, but everything is clear now and I observe her actions out of habit, and the comfort that comes from having her around, when no other human being takes an interest in me any more. To those who come after me, to find her acting out her role on my TV screen, and puzzle over the miles of code that underpins the things she does, perhaps these words will go some way to explaining what it is that she's about.

I sleep a lot these days, which is not what I expected of my old age, and the nights have become like dark velvet canvasses on which are painted a succession of vast dreams. Sometimes I dream of the past lives I imagine I have yet to live, when I eventually transcend the future of this particular reality, a reality that is becoming progressively more blurred around the edges, so that sometimes I'm not sure where the dream ends and reality begins.

There is one recurring dream I seem to settle upon more and more. It is the September of 1982 as it once was, and as it will be again. But this time I am reading a newspaper on a train. There is a full page advert for

a Sinclair Spectrum computer. I am ignorant of such things, but curious,... Eventually, I lower my paper to gaze out of the window but am distracted by the reflection of a woman. As I look, her reflection smiles directly back at me. She seems familiar in some way and as she sits there, she regards me with a fascination that is at the same time unnerving yet also comforting in its intensity. I look around to view this lovely apparition in the flesh, but find the carriage otherwise unoccupied. Then I realise the seat she occupies is actually my own. I am staring at a reflection of myself. And the man I was, is now but a figment gnawing at the imagination of this life, the life that now expresses itself through the woman once known to me as the enigma -

-that was Carla Sinclair.

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