

# 1 Charade

*The grand unified theories, Koenig writes, are difficult to verify experimentally. Nevertheless, they illuminate our understanding of elementary-particle interactions so elegantly that many physicists find them extremely attractive.*

“What an extraordinary sentence,” she says.

He is deeply startled and spins full circle, almost pitching his desk chair off its base and virtually colliding with her. “Good God!” he says. “How —?”

“So *elegantly*.” The girl brings her hands together in an odd gesture of wonder. A mass of hair, which is fair and unruly though tamed into a single thick braid, falls over one shoulder. Her eyes are a curious colour, a kind of borderline blue, intense; or perhaps (it is the middle of the night, and the desk lamp casts odd shadows) a sort of sea-green.

“So *elegantly*” she repeats, opening her hands, looking at them as if the words, mysterious and glittering, were cradled there. Her smile is speculative, dry, possibly mocking. “Elegance as scientific methodology?”

He blinks. From the corner of his eye, he notes with dismay a ketchup stain on his corduroy pants; also a protruding loop of undershirt. He is embarrassed. He clears his throat. “You shouldn’t ...” (What is the matter with his voice?) He coughs into his fist, frowns, clears his throat again. “You absolutely shouldn’t be here.”

And her eyes, contemplating both his trailing undershirt and the words in her palms, flash blue-green with surprise. “I shouldn’t? Why? Where am I?”

“Building 6,” he says inanely — though it is not his office, which is upstairs. This is the office of a younger colleague, an experimentalist, as must surely be obvious from the congestion of equipment. “The main computer,” he adds. “My — ah — a colleague of mine ...”

The girl’s skin seems unnaturally translucent. Of course, the weird light from the monitors is responsible.

“A colleague?” she asks.

“An *experimentalist*.” It is discreetly done, this indication of a drop in the social scale. “His — ah — this is his office.”

Behind her head a loop of polyester tubing snakes across the basement ceiling and throbs like a vein. The colon of MIT surrounds them. Heating ducts and eccentric plumbing and pipelines for argon gas tie themselves in intestinal knots.

“I’m looking for someone,” she says.

Ah, he thinks. It is rumoured that his colleague sometimes engages in non-academic activities late at night in this very room.

“Actually,” the girl says, “to be more accurate, I’m looking for several people.”

Her accent puzzles him. “Where do you ...? From where ...?”  
“Harvard Square. I came by subway.”

“No, I mean —”

“Are you Professor Koenig?”

“Yes, but —”

“They said you worked late. I’m Charade Ryan.” She extends her right hand, quaintly formal, and he shakes it. Shock. Currents pass back and forth. He thinks of quarks and uneven fractional charges. “And the connecting link is Katherine Sussex,” she says, quite cool and businesslike. “You remember Katherine?”

He stares at her blankly, the name meaning nothing at all.

“I see,” she says. It seems a great deal has been revealed by this response. He has a sense of her jotting down data in a logbook somewhere. “Perhaps,” she says carefully, “if I mention your former wife Rachel and the trial in Toronto?”

He is stunned. For a moment his vision blurs, his ears sing, he thinks he might faint, or be sick, or do something equally disgraceful. The room spins, the Toronto court is packed with the argon canisters, the computer monitors, the MIT bulletin board, the basement ducts, pipe elbows, plumbers’ clasps, valves, silver insulation packing. Nothing can be counted on to stay in its proper place. He opens his eyes very wide, testing, and presses his fingers against the sockets. Warily, he focuses on his arms and legs in case they go into spasmodic behaviour, in case his hands make a telephone call, in case his legs take him out to Logan airport for another Boston–Toronto flight. He sinks back into the swivel chair and closes his eyes and forces himself to take deep and regular breaths. Inhale, count of ten, exhale.

When he shakes himself clear of shock and looks again, the girl has vanished.

Of course, he is certain he has invented her. Or that he has fallen asleep at the desk and Rachel, his ex-wife, has spooked another dream. Well, not Rachel really. His own guilt, he supposes, which comes in a thousand and one different guises and plays many games.

In the large tiered lecture hall of Building 6, Koenig draws black-board graphs of both the standard and the inflationary models of the origins of the universe. His field of scholarly inquiry is the first second after time began; specifically, that space between  $10^{-30}$  and  $10^{-35}$  of a second after the Big Bang itself, a crack large enough to swallow a life.

He is discussing energy densities and the “flatness problem” arising from the standard model, “first pointed out,” he says, glancing back over his shoulder at the class, “in 1979 by Dicke

and Peebles at Princeton”. Two hundred students dutifully scribble this into notebooks. “And further elaborated,” he says, but something in peripheral vision troubles him and he falters, turns back to the blackboard and continues with his three-dimensional representation of two Higgs fields, falters again, the chalk poised like a wary sentry. “And further elaborated ...” He casts about in his mind, bewildered, not yet quite alarmed, and mercifully words swim up to the rescue. “Further elaborated on page twenty-three of the offprint I handed out last week.” The unease passes. He labels the false vacuum, the energy barrier, the true vacuum. The students make faithful transcriptions. In the shallow concavity of the false vacuum he draws a ball and fills it in, scribbling, chalk dust powdering his fingers and thumb.

“This represents the universe,” he says. He draws an arrow. “This is how the ball, the universe, would roll if the Higgs fields were pushed from their initial value of zero by thermal or quantum ... or quantum ...”

Something is unsettling him, he feels slightly asthmatic and dizzy.

“Thermal or quantum fluctuations,” he says decisively, wrenching his concentration back on track. He draws another arrow.

The chalk breaks.

“Ah ...” He turns to the tiered seats and holds on to the podium. “I believe I may have to ...” The room is fogging before his eyes. “You can pick up copies of my article at the departmental office. I’m afraid that I ...”

He sees her then, third highest tier, near the middle. He could swear she has never been in his class before.

“I think,” he says, a clammy hand to his forehead, “that I am not ... I’ll let you go early. Read the article for —”

A din of shoes, of books and bookbags being scraped up, swamps his voice. White noise prevails. He leans back against the blackboard, lightheaded, and watches them file past. His

colleague, the experimentalist, nods on the way out. (His colleague? What is his colleague doing sitting in on the introductory course?) Then the girl, who might have set her compass by Koenig, comes straight down the centre aisle looking a bit like one of those long-legged birds — herons is it? — graceful but with a hint of precariousness as she negotiates the steep tiers. He could almost say she staggers slightly, except that her body movements are far too delicate.

For a moment she pauses on the other side of the desk and looks at him across the lab sink and the high chrome curve of the tap. There is nothing hostile or impertinent about her look, but she does not smile.

“Are you ...?” He fidgets with papers on the desk. “Are you registered or auditing? I don’t seem to remember ... ah, here it is.” He has the computer printout and looks up. “What was your name again?”

“Charade Ryan.”

“Shuh ...? Shuhrahd Ryan?” He frowns. “I can’t seem to ... how do you spell it?”

What is particularly unsettling is the quality of ... of what? of *knowingness* in her smile.

“Ryan with an R,” she says, the ironic tone so exquisitely muted as to seem like a compliment. Or an invitation?

“And Charade with a C-h. As in *Paris talks are a bloody charade*, *Prime Minister* says. My mother thought it was a French word.”

“I see.”

*Prime Minister?*

He runs his eye down the printout. “I still can’t seem to —”

“I’m not an undergraduate,” she says.

At the door, his colleague calls sharply, “Charade.”

She nods and leaves.

She forgets to pick up her folder of lecture notes. Koenig hesitates, thinks of calling after her down the corridor, picks the

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folder up warily, shoves it into his briefcase. No doubt she will return for it. It is a standard red folder with the MIT crest on its cover. Also on the cover are her name, her dorm room, a phone number.

## 2 *The First Night*

“Any object looked at steadily ...” Charade begins, her eyes fixed on something not in Koenig’s apartment. He watches her, fascinated, as he rebuttons his shirt.

The sequence of events leading up to this moment is hazy.

He watches her. She could be eighteen or thirty; her body is slight and boyish, but her eyes seem old. She is certainly not beautiful, not at all the type he usually ... Striking, perhaps, though he cannot quite pinpoint why. And there is some quality that tugs at him: the way she stands with her head slightly tilted; the way she crooks her knee and balances one bare foot against the other ankle.

Whatever has been absorbing her gaze releases her and she nods to herself. “Yes,” she says. “Any object looked at steadily and intently for too long begins to disintegrate before the eyes, isn’t that so? And Katherine — Katherine Sussex, whom you don’t seem to remember — Katherine thinks that is the explanation. You know how it is: molecules float away from each other, they drift across the iris in little haloes of gold, atoms peel themselves off from the molecules, electrons go flaking away from the atoms ...”

What he listens to is less the words themselves than her exotic accent, the amazing shapes the sounds make in the air.

“Ah,” she says, misreading his smile and turning defensive. “I see I haven’t got that quite right.” And he thinks of tracks made

by muons and other particles in bubble chambers, he thinks of the lucent spirals and hairlines of light that they leave in their wake.

She perches, still naked, on the end of the bed and hugs her knees up under her chin. Is the action deliberate? he wonders. Deliberately wicked?

“I’m way off track, aren’t I?” she asks. “I’m completely misinterpreting what you said about subatomic particles.”

Then again, perhaps she is unaware of the effect she creates. He can think of nothing at all. His buttons and buttonholes are hopelessly mismatched, and she smiles a little to see the odd loops of shirtfront. He begins again, making an effort not to appear flustered, but forgets that he has already tucked his top into his pants and goes on pointlessly pushing at the fabric and hiking up his belt.

“I do get distracted in your lectures,” she says. “Especially when you do things like that. I’ve sneaked into your big introductory class several times, you didn’t notice, did you? Course 8.286, that is. ‘The Early Universe.’ And did you realise you do that in front of the class sometimes? Check that your belt is still there, I mean. And rake your fingers through that shock of hair that falls into your eyes ... Yes, like that ... I realise it’s a nervous gesture, but it’s very attractive.”

“Uh ...” he says, as she swings her legs over the side of the bed in a neat arc and crosses to his dresser. “Um, I’m not sure why I ...” He watches her fiddle with his car keys, a set of cufflinks, a silver hairbrush. “Um — nervous like this, I’m not usually ...” Of course he knows perfectly well the reason why; it is because she mentioned Rachel in the middle of the night, when she appeared beside his desk in the computer room. At least, he thinks she mentioned Rachel. He is afraid to ask, in case he imagined it. He is afraid to ask in case he did *not* imagine it. “I’m not usually like this,” he says.

“So I hear.”

He jerks the belt a notch too tight. "Indeed?"

"Yes." She leans against his dresser, arms folded, and studies him. "Energetic lover, very polished, very smooth; that's what they say. But a specialist in quick and tidy exits. Positively obsessive about it. A good fuck, a quick parting kiss, and then off with my lady's head. Well anyway, get her clothes back on her and shunt her out the door before the afterglow fades. That's what they say about you." She shrugs disarmingly. "Around the dorms, that is." She gestures with her hands to show how little this gossip affects her. "Anyway, I'm nervous too, which must be apparent. I'm sorry, I'll try to stop fidgeting with your things."

He waves this aside and pulls on his socks while she watches. Probably, she thinks, he does everything with this kind of intense concentration. Probably it is an article of faith with him that socks hug ankles with the exactness of a mathematical matrix. A vibration crosses the floor and he feels it through one socked foot and looks up.

"Apparently," he says stiffly, "this is very amusing."

What she is doing, actually, is biting one fist to keep a gust of laughter back. "I'm sorry. It's just ... well, we do look bloody ridiculous, pardon my Australian."

"*Australian*," he says. "I wondered where that accent —"

"You're not used to this, are you? You really are used to the quick fix." She adopts a mock documentary tone. "Questioned under oath, the famous physicist confessed that he did prefer a woman to make a discreet and unmessy exit as soon as possible, and furthermore he expected her to be decently uneasy when invited into his Cambridge apartment, the air of which is so thick with the symbolic presence of his recently departed wife and children." She takes a deep and rather dramatic sigh and reverts to her normal voice. "Actually it *is* ... there's this domestic and familial *humidity* everywhere, it's a bit hard to breathe, but I'm afraid you've bumped into the essence of unorthodoxy in me, you can't really count on any of the usual things making me feel uneasy."

He is perfectly astonished by this little sermon and declaration of immunity. *Recently departed wife and children*, he thinks, stunned. He is astonished, too, by the speed at which she delivers pronouncements, and by the flashing ballet of her hands. It occurs to him that if they were tied behind her back, she might be unable to talk. It is as though she has suddenly been wound up tight, to full pitch, and let go. She cannot stop.

“Just the same,” she says, “I will admit to a strong sense of the ludicrous, I admit I feel ridiculous — not uneasy, or indecent, just ridiculous — pacing around your living room naked while you sit there watching. Do you always dress so quickly afterwards? The pipe, yes, I’m used to that. It’s the first thing all academics do afterwards, but a great many, you know, are quite content to sit there propped up on pillows, with maybe the sheet pulled part way up, puffing away contentedly and talking, sometimes for hours. What’s really getting to me is that now you’re even putting your tie back on, which I think has to be construed as the most pompous, the most heavy-handed ... No?”

He is staring, puzzled, at his own hands knotting his tie. He still has a dazed sense of her voice hurtling on and on, but what startles him is the realisation that the last thing he wants her to do is leave; the last thing he wants to find his hands doing is dropping heavy and involuntary hints.

“Still,” she says, “if you could just toss me my shirt, I’d feel a little less ... Thanks.”

While she does up a button or two at her midriff (not bothering with any other item of clothing), he loosens his tie, removes it, and throws it onto the bed.

“How daring,” she laughs. She curls up in his armchair and hooks her legs over one side. That maddening knowing little smile of hers flutters in his direction, then rests on the abandoned tie for several seconds, then turns inward again.

He waits.

“You know,” she says at last, “I can’t stop thinking about the implications of your lecture last week. Heisenberg’s theory, wasn’t it? — about uncertainty as the essence of science, about the *necessity* of uncertainty, about how we simply have to accept that electrons are always in only a partially defined state, that there is, in fact, no other way they *can* be. That’s right, isn’t it? Yes, I copied it down, because it seems to me to have a bearing on my life. Philosophically speaking, that is.

“And on yours too, right? All that energy pro and con, the things that did, that absolutely without question *did* happen; but which also, according to other people, *couldn’t* have happened. I mean, you know, your former wife Rachel, and the trial in Toronto.”

Something alarming happens to Koenig’s breathing, he takes quick little in-out in-out in-out breaths, counts to ten, inhales slowly (from the diaphragm), holds, exhales, wills his muscles to unclench.

She swings her legs across to the other arm of the chair.

“Katherine says either we’re all slightly mad, we’ve all hallucinated our own pasts (which is a reasonably tenable theory, I think) or else there’s a perfectly rational explanation if we could just put our fingers on it. Katherine thinks — I say Katherine for reasons of formality, but in fact she’s my Aunt Kay. Well, strictly speaking, she’s not *really* my aunt, but we do that in Australia, you see. I mean, I don’t feel comfortable calling her just Kay. We’re still rather shocked at the casual way American children do that, call their elders by first names — even for total strangers they’ve just met, right?” She leans toward him, eyebrows raised. “Did you realise we find that abrasive?”

He tries to concentrate on the question.

“Anyway, in Australia, we don’t do that. Give kids free rein, I mean. Give them absolute social rights.

“Speaking of children.” She gestures toward the kitchen. “I saw the drawings on your fridge door. Second marriage obviously.”

He is mildly startled, but makes a non-committal sound.

“It’s Joey, isn’t it? — yes, he’s signed his name — who drew that crayon rainbow over a number of green teddy bears. Was it you or your wife, by the way, who chose to display that particular drawing? Green teddy bears. It invites analysis, doesn’t it? Joey’s your more interesting artist, I think. Sara’s drawings are too neat and proper, it’s happening already, you see, it gets to girls awfully quickly, the desire to please the teacher, to do things right. You’re going to have to watch that, it’s a real killer. Though I myself was spared from the worst of all that by having a mother who was known as the Slut of the Tamborine Rainforest.”

He considers how best to explain Joey and Sara and the presence of their drawings in his kitchen, but instead, slightly dazed, echoes: “Tamborine Rainforest?”

“Outside Brisbane. You do know where Brisbane is?”

“Uh,” he gestures apologetically. “Well, Australia. But I guess I’m a bit vague about the precise ...”

She shakes her head. “That’s another thing about Americans, you’re so *parochial*. Your geographical ignorance is absolutely stunning.”

“Well,” he begins, “I suppose it’s ...” and trails into an uneasy silence that spreads and fills the space between bed and armchair and settles onto the girl. He cannot bring himself to ask what news she is bringing of Rachel, nor what the mysterious Katherine Sussex has to do with anything (though that name is beginning to evoke a pervasive and non-specific dread).

The blues music of Cambridge traffic, muffled, rises into the room and holds them in some kind of spell. When it is fractured — a collision somewhere, quite close — they both jump, and Charade continues as though the track of her thought, briefly on hold, has been nudged back into sound.

“The consequence of having Bea for a mother,” she says, “and having no father at all — although in another sense I had scores of fathers, but I could take them or leave them you see — the

consequence was I escaped a lot of that caging, the bound feet business, the stuff that happens to girls everywhere, but especially in Australia. Charade, my mum would say ...

“By the way, you keep mispronouncing my name. It’s Shuh-*rahd*. I hope you don’t mind my pointing it out. It’s because Americans mispronounce the word itself. The word *charade*, I mean. The proper way, well, the Brit way, which is much the same thing isn’t it? is the way I say my name.”

Koenig is aware of a rising sexual excitement, its origins murky. He is dimly conscious that it has something to do with the provocation of a woman who does not seem aware of his ... well, *standing* in the scientific community. (Only last week a woman he had met at a Wellesley dinner party wrote a note inviting him for dinner and postcoital champagne. When she telephoned she said there was an *aura* about him.) Of course this kind of thing is tiresome.

Nevertheless.

Still.

Has Charade Ryan no awe at all?

Her hands flash, her eyes flash, she springs out of the armchair like a dancer and paces back and forth around his bed.

“Anyway. Aunt Kay — Katherine — whom you have met in Toronto, though you remember nothing whatsoever about her —” It is clear, from the tone of her voice that this is a particularised item in a more general condemnation. “Aunt Kay is not really my aunt, though she’s close to it. She and my mother Bea were half-sisters. Sort of. For a few years anyway. It’s complicated, but I’ll get to that.”

Yes, he thinks. She probably will.

“Anyway, up till now I’ve thought that Aunt Kay and my mother were either right or wrong about my father, and that eventually, if I was persistent enough, I’d find out which. But after what you said about Heisenberg ... I mean, if electrons can exist and not exist at one and the same time ... Well, maybe the

stories about my father and Verity Ashkenazy (the famous Other Woman in the piece), maybe they could be right *and* wrong. Both.”

She is beginning, he notes with dismay, to gather up her clothes as she speaks, beginning to get dressed again, though in a rather haphazard and eccentrically disorganised way.

“Maybe,” she says, “on odd days, my father is *somewhere* but keeps on vanishing without a trace. And on even days he doesn’t exist and never did. Which means that on even days I’m the product of an immaculate conception. Though not, I hasten to reassure you, in the precise Catholic and theological sense. Nothing to do with the sinless germination of the seed of the Virgin Mary in the untainted womb of St Ann. And certainly not, I promise you, with any pretensions toward either the messianic or the pure on my part.”

“Well,” he says, bemused. “What a relief.”

“Oh, quite the contrary, I assure you. No. I think it was another case of microphenomena in uncertain states. I think it was parthenogenesis in the manner of amoeba. They can subdivide themselves just by thinking about it, right?”

Her hand sweeps through a delicate arc, a sort of visual punctuation point, and he catches hold of her wrist and pulls her toward him. “Why are you getting dressed?” he reproaches.

“Because it’s almost daylight,” she says, indicating the window.

## *3 Matter, Anti-Matter and the Hologram Girl*

“The creation of a hologram,” Koenig’s colleague, the experimentalist, is saying to a cluster of awe-struck undergraduates, “begins with the splitting of a laser beam in two.” He is holding court in a corner of the Media Lab, and Koenig stops to listen. “And then,” his colleague says, “the beams spread out to caress, as it were, the entire subject — in this case an arrangement of doughnuts, styrofoam cups and one hot dog.”

Koenig watches with the mildly patronising disdain of the theoretical physicist. There is a certain doggedness to all this, a terrier-like persistence that one has to admire, but when all is said and done, the Media Lab people are little more than brilliant technicians, dealers in nuts and bolts and razzle-dazzle. Experimentalists. It is not that Koenig is an intellectual snob, he quite absolves himself on that score. It is simply that mere electronic hocus-pocus is not particularly interesting, and nor is mere data; and he is not inclined to be swept off his feet by the narrowly empirical until he has a theory that will give it grace and shape.

His colleague is displaying the developed holographic plate in white light now, and the undergraduates gasp as phantasmal coffee cups and doughnuts and a solitary three-dimensional hot dog float in the air. “Is that a dagger I see before me?” someone demands theatrically, lunging at ghostly colour. A scattershot of nervous laughter ricochets round the room.

Several young women move closer to their magician-professor and one of them touches his sleeve, possibly believing that energy will leap across the gap or that sorcery is contagious.

“You can do other things. Visual music, for instance. I’ll demonstrate.” What an exhibitionist, Koenig thinks. His colleague is lapping up attention, fussing with glass plates, lasers, white light. “What I do, essentially, is tape myself playing blues on my sax, run the tape, and then transpose the music into visual equivalents with computer graphics.” He has the plate in position now. “It’s a sort of collage with photographs, mathematical notations, graphed equivalents of sound, cathode ray tubes, and electronic imagery. I call this one *Blue Lady*.”

Fanfare. Koenig could swear the room is humming with trumpets, all of them blown by Professor Magician himself. How can the students be taken in? Koenig composes an instant jazz riff of his own, hums it silently, calls it *Cheap Trick*.

And then, out of the murky room, out of nowhere, out of the saxophone and the puddle of lasers, steps the Blue Lady who brushes by them with an ectoplasmic spin.

It is the girl. Charade. Whom Koenig has not seen since she vanished from his bedroom several nights ago.

She twirls like a top, her skirt flaring and rising. From certain angles you can see her thighs, and then as she spins more slowly, languidly, the blue skirt sinks, drifts, floats about her calves and ankles. From everywhere you can see her eyes, which are very very blue, or maybe teal, or maybe blue-green (depending on the lift and dip of the skirt).

Koenig, feeling dizzy, has to lean against a bookcase.

“All done with mirrors,” his colleague jokes. “Plus beam splitters and cathode ray tubes and video photography.”

In the hallway later, Koenig asks casually, indifferently, “That girl. The hologram girl. She a graduate student?”

His colleague says sourly: “Not your type, Koenig. She’d break your balls.”

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Tuesdays and Thursdays, the mornings of the large introductory course, Koenig scans the tiers of seats but she does not come. Others come. They knock on his door, they saunter in the lot where he parks, no effort seems to be required; Radcliffe women, MIT women, Wellesley women, faculty and students, murmuring *brilliant*, murmuring *famous*, murmuring *Nobel Prize*, it seems to be an aphrodisiac, he does not remember their names. They come and go and nothing helps.

Nothing helps because he dreams of the girl Charade. Nothing helps because in any case the mournful eyes of Rachel, his former wife, are always watching. Nothing helps; but still the women come and go.

“You should be put in a museum, Koenig,” his colleague mutters one day in passing. “The compulsive consumer, a macho antique.”

Koenig is startled. “Listen to who’s talking,” he says curtly.

“Not everyone chatted up by the Nobel committee gets to Sweden,” his colleague says.

Koenig works late. He is pushing back, mathematically, to that busy stretch of time between the Big Bang and a specific point occurring  $10^{-35}$  of a second later. With present data, he measures the red-shifting of the light from distant galaxies. He works at the borders, at the junction of astrophysics, particle physics, cosmology. What he is obsessed with is cross-fertilisation, the braiding of disciplines. What absorbs him is the way the girl seemed to hold words in her hands and the way she appeared one night (did she not?) in his apartment, and the way she spoke of his wife Rachel, and the way ...

More and more he works in the basement of Building 6, rather than in his office or his Cambridge apartment, in case she reappears. He is waiting for her to tap on his door.

Sometimes, on Tuesdays or Thursdays, he thinks he sees her from the edge of his eye as he writes on the blackboard. But when he turns, it is always someone else altogether, someone bearing

no similarity to her at all, except for a braid tossed to one side perhaps, or a few curls across the forehead, or blue-green eyes.

In the murky basement light, beneath coiled ducts, he dallies with the text of a speech that is to be presented at the Science Museum. *Matter*, he writes, *a sense of the solidity of matter, is one of our most persistent illusions. The presence of matter represents nothing more than a disturbance in the field at a given point, the figure in the carpet as it were.*

“What a sentence,” she says. And is still there when he turns.