

The Unlikely Valley

by

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SCENE ONE

Setting: a nearly empty hotel bar. CASSIE, a middle aged woman in slick business attire, sits nursing a Scotch. HANNAH enters, a millennial in business casual attire, and sits at the other end of the bar from Cassie. After a brief silence, Hannah tries to make conversation with Cassie.

HANNAH

You seen the bartender lately?

CASSIE

He said something about a shift change and then he hasn't been back.

HANNAH

When was that?

CASSIE

About four days ago.

HANNAH

I see. So you've been sipping that drink for four days.

CASSIE

Well look, I'm not above climbing behind the bar.

HANNAH

Cool, would you climb back there and make me a cosmo?

CASSIE

Sure, as long it only contains Scotch.

HANNAH

You don't, uh - I almost said you don't look old enough to drink Scotch, but then I realized I don't even know what that means.

CASSIE

Well, past a certain point in life, any of the brown liquids become preferable to mixed drinks.

HANNAH

What point in life is that?

CASSIE

Whatever the local drinking age is.

HANNAH  
Is there really no bartender?

CASSIE  
He was just here, honestly.

HANNAH  
You here for the conference?

CASSIE  
Which one?

HANNAH  
Oh, the - is there more than one?

CASSIE  
There are two.

HANNAH  
I just got here. I didn't realize  
there are two in the same hotel.

CASSIE  
Pulling in kinda late, aren't you?

HANNAH  
I was working some long hours on a  
project and caught the last flight  
here.

CASSIE  
I'm going to guess you're with the  
visual effects conference?

HANNAH  
Yeah! What, you can tell just from  
looking at me that I'm an  
animator?

CASSIE  
You just don't look like a  
neuroscientist.

HANNAH  
Oh.

CASSIE  
I just mean -

HANNAH  
So there's a neuroscience  
conference happening here too?

CASSIE  
Yes.

HANNAH

Do neuroscientists look like you,  
in general?

CASSIE

Good ones? Not necessarily.

HANNAH

Is that self-deprecation or is  
there actually a dress code...?

CASSIE

I'm just kidding. I'm not an  
elected representative of all  
neuroscientists in the world, so  
don't make any judgments based on  
my appearance, or my behavior, or  
my drinking habits, or pretty much  
anything about me.

HANNAH

Well, so, you're here at a  
neuroscience conference, though,  
right? Are you a speaker on a  
panel, is that why you're here?

CASSIE

I'm here because my university  
expects me to be here, and because  
there's good skiing nearby.

HANNAH

I'm speaking on a panel.

CASSIE

I would've guessed that.

HANNAH

How?

CASSIE

Something about your - enthusiasm,  
I guess.

HANNAH

You're totally judging me based on  
my appearance, my behavior, my  
drinking habits -

CASSIE

Guilty.

HANNAH

It's cool. That's kind of what my talk is about. How we unconsciously judge people. Well, not real people - animated people obviously.

CASSIE

Obviously.

HANNAH

You ever heard of "the uncanny valley?"

CASSIE

Maybe?

HANNAH

Well - in 3D animation at the moment, no matter how good the tools or how much computation we throw at the problem, people can still tell when they're looking at an animated person. Usually something's off with the eyes, or the mouth is just ever so slightly out of sync with the dialogue, or whatever - anyway, I'm here to talk about ways we might solve this problem in the next few years.

CASSIE

Next few? How many is that?

HANNAH

I don't know - five? Ten?

CASSIE

That's like the exact opposite of my situation.

HANNAH

What does that mean?

CASSIE

I study the brain, like - networks of neurons, and there's no amount of computation in the foreseeable future that will help us understand how it works.

HANNAH

Really? I thought we knew a lot about how the brain works.

CASSIE

I mean, yes we can observe how it works, we're getting better at that I guess I should say. We just can't figure out why it works that way.

HANNAH

Really?

CASSIE

I will spend probably most of my adult life working on the tiniest sliver of a problem space that will not likely be truly understood and mapped to our satisfaction for a thousand years or more.

HANNAH

Really.

CASSIE

If it wasn't for the grant money, this could be depressing.

HANNAH

Is that why they don't let you speak on any panels?

CASSIE

"Let" me? They couldn't convince me to spend that much time sober. I'm totally kidding.

HANNAH

Speaking of - I'm starting to think I would have better luck getting drunk with the mini bottles in my room.

CASSIE

I've got a full bottle of Scotch upstairs actually.

HANNAH

Really? Why are you drinking in the bar?

CASSIE

Don't generally prefer drinking alone.

HANNAH

I see.

(pause)

Yeah, let's hit your full bottle  
of Scotch.

SCENE TWO

Setting: Cassie's hotel room. Nothing fancy, just a table with two chairs, and a single bed. Hannah sits on the bed, relaxing, while Cassie pours whiskey into two plastic hotel glasses.

HANNAH

I thought you wanted to sleep with  
me, but you really just want to  
talk about neuroscience?

CASSIE

*Computational* neuroscience, and it  
should interest you, because while  
you're busy trying to figure out  
how to make artificial people that  
*look* real, science is over in this  
other corner trying to figure out  
how to make artificial  
intelligence that *acts* like a real  
person.

HANNAH

Really?

CASSIE

And I do want to sleep with you.

HANNAH

Well.

CASSIE

Just hear me out though.

HANNAH

Absolutely.

CASSIE

I'm trying to think of an analogy  
- okay, like you said in the bar,  
eyes are a problem, right? I  
imagine at some point, hair was a  
problem, or skin tone or texture,  
like these are all problems you  
had to solve, right? With  
computation?

HANNAH

Well - I imagine there was some artistry involved too.

CASSIE

Maybe, at the UX level that's true, but I mean down deep, the problems are solved with math, right? So imagine instead of simulating how eyes look, you're instead trying to simulate how an actual protein folds in real time.

HANNAH

Don't you just - watch how it looks and then replicate it?

CASSIE

No, that's animation, not simulation. See? To simulate the organic effect of a protein folding for even a millisecond would require more computation than - I mean, you'd win awards if you could pull it off.

HANNAH

So?

CASSIE

So - that's at the level of a protein, now try to imagine you want to peel the brain apart neuron by neuron -

HANNAH

Which sounds painful.

CASSIE

And even if we had a complete map inside a computer that showed us how these neurons fired when subjected to certain stimuli, we still wouldn't understand *why* they fire certain ways, *why* decisions are made by certain clumps of neurons, *why* "thinking" is an emergent property of electrical activity in the brain in the first place.

HANNAH

If you're trying to turn me on with this - I mean, it's sort of working...

CASSIE

So this is what I do, me and many of the people at my conference, even though we have nothing close to the physics required to understand what we're seeing, it's like we're chipping away at this problem molecule by molecule and reporting our results in the wild, vague hope that someone, someday, is able to derive an explanation.

HANNAH

An explanation for what?

CASSIE

For the mind. For the sensation of "self".

HANNAH

Oh geez, really? That's what you want, you really want that?

CASSIE

Don't you?

HANNAH

Do I? Do you?

CASSIE

Are you really asking me that?

HANNAH

I am, because you're sitting up here hiding from your peers and drinking a lot of admittedly very good whiskey and I wonder what you would even, like what would happen if tomorrow you had the physics, and the computers were sufficiently mega, what would happen if you suddenly had a very handy and precise definition of self, and a model of the brain that reliably worked inside a computer, I mean, wouldn't that be, what would that, I can't even picture what that would - I mean, can you?

CASSIE

That is a valid question.

HANNAH

I am full of valid questions. I mean, as an animator, I want you to believe that the person you see on screen is real because then I can tell a whole different category of story to you. But it's just storytelling. It's still physics, obviously, and people call it "the uncanny valley" because it helps to have a term of art for some vague feeling in our gut even if we can't code up a quick solution to it. But the end goal is very simple and clear.

CASSIE

Well - I mean, my field in general is full of therapeutic value obviously. We want to understand the brain because we want to help people whose brain function is impaired in some meaningful way. Right?

HANNAH

Sure.

CASSIE

I'm just - my corner of this problem space - we may not derive a therapy from my corner of this problem space in my lifetime or the lifetime of any of my students or any of theirs, assuming any of them stick with this problem space because of that very reason. It's like counting stars, which astronomers do, you know, or try to, because it just feels like something that would be valuable for us to *know*.

HANNAH

Off topic here, does this type of conversation generally work as a pickup strategy? I mean, I'm obviously in your room, but I just figure I'm an edge case, right?

CASSIE

What stories would you tell if you could solve "the uncanny valley" problem?

HANNAH

It's already happening, I mean we're so close. They can already bring dead actors back to life and convince a percentage of people that they were actually on a real physical set. Pretty soon we'll invent people from scratch and no one will know they're animated. I'm going to live to see that.

CASSIE

Excellent for you.

HANNAH

Are you depressed or something?

CASSIE

Are you kidding me? I usually see the same people at this conference every year. I was excited about coming this year because I saw that they double booked an animation conference here. I wanted to meet - someone like you.

HANNAH

You definitely managed to do that.

CASSIE

I'm pretty happy all things considered.

HANNAH

What did you think would happen if you met someone like me?

CASSIE

I guess I was imagining - some kind of spark that would feel - inspiring.

HANNAH

Am I inspiring? You haven't even seen my work.

CASSIE

I would like to see your work.

HANNAH

You could - review my portfolio. Yeah, I think you would find it inspiring.

## SCENE THREE

The next morning. Hannah is asleep in bed. Cassie is awake getting dressed. Hannah stirs.

HANNAH  
What time is it?

CASSIE  
A little before 8am. You said you didn't have to be anywhere until this afternoon so I thought I'd let you sleep.

HANNAH  
Where are you going?

CASSIE  
I'm speaking on a panel.

HANNAH  
I thought you said you weren't speaking!

CASSIE  
I did not say that. I just didn't promote that fact.

HANNAH  
What's the panel? I want to come!

CASSIE  
You don't have a badge.

HANNAH  
What's the topic?

CASSIE  
Careful, you might fall back asleep if I tell you.

HANNAH  
What's the topic?

CASSIE  
Data storage formats and preservation techniques.

HANNAH  
What does that have to do with neuroscience?

CASSIE

Turns out some people spent decades studying the brain without really paying attention to how their data was stored, and now a lot of the early raw data they collected is missing or corrupted. Can you imagine spending your career on this stuff and then when someone digs up your papers thirty years later, they can't find the raw data that backs up what you published?

HANNAH

Oh geez. Yeah I can imagine that. Pixar lost most of an entire movie one time when their backups failed.

CASSIE

Anyway, go back to sleep. I'll be back in a bit and I'll take you to lunch.

HANNAH

I want to see your panel. Can't you get me in? This is frustrating. I'm trying to pout and it's not having any effect.

CASSIE

It's having an effect. Clumps of neurons are clearly firing in my brain right now.

HANNAH

Well that's something.

Cassie leans in to give Hannah a kiss. Hannah holds onto her, kissing her. Cassie sits on the edge of the bed.

HANNAH (CONT'D)

Am I making you late?

CASSIE

No. I mean, I don't care.

(pause)

You asked me a question last night and I dodged it a little.

HANNAH

Yes you did.

CASSIE  
If I had all the computation in  
the world, and I could model a  
brain inside a computer, what  
would I do.

HANNAH  
Yes.

CASSIE  
It's a trick question really.

HANNAH  
Is it.

CASSIE  
Yes. Because it wouldn't be a  
model, at that point. It'd be a  
real *mind* and we'd be in all sorts  
of ethical trouble.

HANNAH  
Oh.

CASSIE  
But - so - my brother fought in  
the Iraq war. And he's enrolled in  
this study now, where they're  
going to give him Ecstasy to try  
to treat his PTSD.

HANNAH  
Seriously? That'll work?

CASSIE  
They think it'll help, yeah.

HANNAH  
How?

CASSIE  
Well, that's just it, who knows  
"how"? When you think about all  
the antidepressants and mood  
stabilizers and anxiety  
medication, I mean everything we  
throw at the brain today, and  
sometimes it works, or I mean, for  
some people it works and for other  
people it bounces off and we just  
keep trying things in various  
combinations, almost literally  
just to see what will happen...

(MORE)

CASSIE (CONT'D)

we know a lot less about how these drugs work in the brain than you might suspect, given that we're prescribing them by the boatload. But so - my brother. He's like, "You're a brain scientist, why can't you help?" And I couldn't - explain to him, that - that maybe, in a thousand years, my work, what I do, will contribute to a real therapy that will work for people like him because by then we will know exactly what's going on in the brain. I couldn't say that to him.

(pause)

But I'm glad science isn't waiting around doing nothing, you know? We attack the problems we see from every angle, and hope for the best. Sometimes trying things just to see what will happen is how you get surprising breakthroughs that really *help* people. And maybe someone in *my* corner of the field will stumble onto something like that, who knows, but in the meantime, we gotta keep, you know, counting stars.

HANNAH

In grad school, one of my big projects was helping with the restoration of these animated films from the forties. We were methodically cleaning individual frames of film, thousands of frames you know, and you couldn't rush, you couldn't take any short cuts or you'd damage these ancient prints. And the reason they had us doing this work, the reason was because it made us see how each individual frame was drawn, by hand, by a person.

(MORE)

HANNAH (CONT'D)

With animation they could cheat and only use 12 frames per second most of the time, but still, imagine how many seconds go into a 20-minute film, and imagine artists hand-drawing thousands of frames, and now, you know, seventy years later, kids like me, who spend our entire creative lives inside computer software, got a chance to see -

CASSIE

See what?

HANNAH

See the *commitment* those artists made. And now thanks to people like them, we have Pixar movies, you know?

(pause)

You'll get your Pixar movie someday.

CASSIE

Maybe. I mean, I don't go to movies.

HANNAH

Uh huh. I'll be showered and ready for lunch when you get back.

CASSIE

Maybe you should wait and I'll shower with you.

HANNAH

See, I knew you were a creative thinker.

END