

START

Scene Four – Experiment Two – Her Discovery

EMILIE. What is energy? For Newton, energy was mass times velocity.

In this equation, in Newton's view...energy disappears. If a carriage hits another carriage...there is a big collision, the energy of each object cancels each other out, and then stillness. Energy is lost forever...and it is in this void, this stillness...where the hand of God enters...intervenes...and reignites the forces that start the world spinning again.

But...if this theory was correct...that would mean that a ball that falls in mud at twice the speed would make a hole twice as deep. But, as Leibniz discovered before me, when a ball falls at twice the speed...the hole it makes in the mud is four times as deep. And if a ball hits the mud at three times the speed...the hole is nine times deeper. Energy is mass times velocity squared...In this view, when two carts or...birds or...lovers...collide...there is a big crash...and then perhaps quiet...but no real stillness...all the energy that brought them into collision gets thrown into the atmosphere in a messy jangle of bent metal and torn wings and broken hearts...vibrating, wringing, beating in new forms of existence. Energy does not escape, it penetrates and transforms. There are no voids. God oversees His creation, but He does not intervene to set things in motion again

Everything changes but nothing is lost. Ever.

(Lights out.)

END

Scene Five

(MILLIE is madly cleaning her house. She is also scooping dirt out of a flower plant and eating it. She is eight and half months pregnant.)

OLIVIA. Millie, I'm here.

(MILLIE is dusting listening to music on her earphones.)

Millie? The door was open.

MILLIE. Oh, you are here early.

OLIVIA. Never late again! Peter is parking the car.

MILLIE. So this is it! Our old house.

OLIVIA. It's charming!

MILLIE. If you say so. Thanks so much for coming by and giving me the ride.

OLIVIA. Of course. We are in for a treat. I looked all over the internet and Urban Moms said this La Maze course was the most satisfying and enriching class in the Tri-State area.

MILLIE. Great. What's all that?

OLIVIA. *What To Expect When You Are Expecting, The Girlfriend's Guide To Babies, The Baby Whisperer.* I'm devouring all of them.

Do you want to borrow some?

MILLIE. No thank you. I don't feel like reading.

OLIVIA. How do you feel?

ACT II

Scene One

START

OLIVIA. *(A school lecture.)* Hello Senior Girl Scout Troup three hundred twenty-one of Mont Clair, New Jersey! My name is Doctor Olivia Hasting Brown.

I am an astrophysicist.

My life's work is to study the universe.

For the next ninety minutes I will be giving you an overview of my work that will hopefully inspire bright young women such as yourselves to consider science as an exciting career path. Ready?

(She looks at her watch and realizes she is in trouble.)

Oh. I'm sorry, I'm so so sorry. I just now realized that I have a doctor's appointment scheduled in half and hour. And I really cannot be late. Really. I can't be late.

So instead of ninety minutes, I will give you a lecture that lasts two minutes...and at the end of the two minutes, you will know almost as much as I do.

Ready?

Let's start four hundred years ago, with the invention of the telescope. Where once we were blind, we could now see...and extend our vision up into the heavens... and to the worlds beyond our own. Galileo, the father of astronomy and modern science, declares the

universe is written in the language of mathematics. Then Sir Isaac Newton drops an apple and infers that the same force that pulls the apple down to the earth, moves the planets, and describes a mechanical universe that runs as prim as a Puritan on a bicycle. Enter the Enlightenment, and an obscure female scientist Emilie du Chatelet throws a wrench in Newton's prim bicycle when she discovers that light has no mass and that energy does not disappear because...energy is mass times velocity squared. Einstein comes along and builds upon her work, suggesting that light travels in both particles and waves, that time is a malleable force, that energy is mass times the SPEED OF LIGHT SQUARED. Suddenly you have a more chaotic, volatile universe; not a Puritan on a bicycle, but a Hells Angel on a Harley. Throw in the fact that the universe is STILL expanding and you have a complex, interconnected Universe gunning on all cylinders and making one hell of a wheelie while barely respecting the dynamics of physical law.

OLIVIA. This is the universe we know.

END

~~Let me tell you what we don't know.~~

~~Dark Matter.~~

~~What is dark matter?~~

~~We have no earthly idea. Dr. Vera Rubin, a DC scientist and mother of four, proposed its existence it in the 1970s...and still we do not know what Dark Matter is - at all.~~

~~We think Dark Matter fills the emptiness of space. It is matter that is undetectable to our senses, reflects no light, and in fact, is beyond our entire electromagnetic spectrum. Dark matter makes up ninety percent of the universe. Everything we see: you, me, the supermarket, the planet, the cosmos: make up the other ten percent of the universe.~~

I am very proud of what I am doing. This baby wouldn't exist without Peter and Olivia. They conceived this idea that will become a person! They are an amazingly amazing couple. Who need me. And they don't know, but we need them.

They chose me. . . because they liked me. . . because they saw a spark in me that they hope they will see in the eyes of their child. And why you don't think that's a tribute to Mom and us is beyond me.

Mom said we should always do something that matters.

I'm doing this for us. Lewis, don't you see? I'm doing this for our family!

Scene Six – France 1700s

START

(**VOLTAIRE** walks across the stage. He pulls out an apple...he is about to eat it. But he sees the audience.)

VOLTAIRE. I know what you are thinking! I know what you are thinking! You feel betrayed by the Voltaire you know and love. You look at me and think “Oh-la-la, I thought the story about Isaac Newton and the apple was true.” And now you might feel a little deceived. First, because you didn’t know that story had anything to do with me. Second, because now you suspect I made it up.

I will tell you these two things:

UN: I did meet/see Sir Isaac Newton in England.

DEUX: There is an apple tree not too far from his house.

Newton’s mathematical work proves that this is a rational universe that functions like clockwork. That, for every action, there is always an opposed and equal reaction; that an unmoving object won’t move unless a force acts upon it; and that an object that is in motion will not stop unless a force acts upon it. He shows that the same force that works on a falling object on Earth, keeps the moon in orbit. And that the moon’s gravity pulls our ocean tides. Newton proves that everything is connected...not by the superstitious beliefs of the Church or the unjust laws of the State or the cruel tyranny of the King...but by rational scientific cause and effect.

Everything is Cause and Effect.

“Nothing will change unless a force acts upon it.”

His equations are not just equations for understanding the Universe, they offer a rational design for changing

our world for the better. By understanding cause and effect, we suddenly have the light to see past fate and find the will to change our lives.

So! Perhaps I took a little poetic license! *Peut-être* the story about the apple is something I made up. But don’t you see? I want the reach of Newton’s ideas to be as simple and as common as an apple.

(**VOLTAIRE** bites or is about to bite into the apple when **CHÂTELET** walks on carrying a package.)

END

CHÂTELET. Monsieur Voltaire!

VOLTAIRE. Marquis du Châtelet!

(*The warmly shake hands.*)

CHÂTELET. I am pleased to see you.

VOLTAIRE. I know your wife appreciates your help and understanding.

CHÂTELET. Is Emilie in the house?

VOLTAIRE. Yes, with Pauline.

CHÂTELET. How is she feeling?

VOLTAIRE. She’s working.

CHÂTELET. As always, that Emilie. I have a wonderful surprise for my daughter.

VOLTAIRE. Pauline will be thrilled to see you.

CHÂTELET. Enjoy your apple!

(**VOLTAIRE** and **CHÂTELET** walk offstage in opposite directions.)

Wait a minute. This is our family home. We grew up here. we inherited this. My business is in the basement.

Grandpa Montenaro came to this country with the dream of building a life here. He worked like a dog and died too soon. But Mom, she bought this house. She loved it.

Don't you see? This is our place in the world. Our past is this house. And my future, my dream, is here too! And you want to get rid of it? So you can fly off to Paris? To go to a school that would never admit you?

If we sell the house where would we live?

This home is our shelter from the storm.

Do you know what happens to people that have no roots? They float off into space and disappear.

The school finally got those little pencils I ordered and Billy was able to grip one correctly. And suddenly his scrawls turned into legible letters. Billy wrote the best letter B ever. Three months of struggling and then today. He did it.

Amazing that something as simple as a pencil can make a difference, you know. . .

I never asked for much. I never had grand designs. I tend my own garden. I go to the supermarket. I teach writing. I buy small pencils. I'm just a man who goes to work. I'm just a man who loves his wife.