# **SYMMETRY**

# **Bernard**

Bernard wakes up, breathing heavily. Confused.

- What the ... ?

The room is clean, white and lacking a door.

A weak light hangs from the ceiling.

- Where am I?

Bernard is intrigued by his strange gray outfit. He examines himself.

- What happened?

Time to stand up. Hands against the wall, he looks around the room, searching for clues: three walls and a large mirror in front.

Bernard sees himself, struggling to get on his feet.

In the corner behind him, a camera points at him.

- What happened...?

As he gets closer to the mirror, Bernard looks at himself.

- How long was I out? I can't remember.

Bernard inspects the room. No door. The walls are strangely perfectly flat and white. Homogeneous. The floor is white. Except for this round area he was lying on. Made out of metal. Bernard steps out. A suspicious camera. A perfect white room. A shiny metallic disc. A large mirror. A dim light. It's all there is.

Bernard looks at himself.

- I look like shit...

Weak, he rests against the white wall.

- How did I get in? How do I get out?

Bernard gets closer to his reflection. Inspecting his own face.

- I must have been out for hours... stupid fluffy red eyes.

He knocks at the wall. Solid.

He knocks at the mirror. Dull?

- Hmm?

It didn't sound as Bernard expected.

Bernard knocks again. Dull.

- What the hell...???

One step back. He looks closer at his reflection. In the eyes. One step forward.

He lays his hand on the mirror.

- What?

Expecting the cold feeling of glass, it's warm. Exactly body temperature.

From the camera, and, what is also apparently a speaker, a feminine voice. One could discern some excitement.

- "Hello Mister A. Hello Mister B."

Mouth open, Bernard doesn't really know what to say.

From the camera to the mirror. Bernard turns his head.

- Mister A? Mister B?

Now gazing at his... what is it? His reflection? No.

- Mister B?

#### Wu

- Oh no. We never meant to make it a "human" experiment. But bear with me!

Doctor Wu never thought she had to justify herself. But hey. At this point, with such a discovery. Such an invention. Nobody would blame her to push the experiment a little further. You know. For fun.

- See, I got that duplicating device to work. Astonishing! Take any object. Put it on that plate. And boom! A perfect duplicate. Atom for atom. Precisely the same. Except...

Doctor Wu, known as the most respected quantum scientist of her generation, had that smirk you would find on a proud kid who would come up with a smart joke.

- Except, the duplicated object would have the opposite chirality.

The three suited agents looked confused. Obviously, they had never heard this word before.

 Well, see, if you were to put a left-handed glove on that disk, you would get the perfect clone of that glove - again - atom for atom, same quantum state. But, the right-handed-version of that glove. Fundamentally, it's the same object. Just mirrored. Flipped. Also known as opposite chirality.

Doctor Wu was moving her hands like puppets.

- That got me thinking you know... what if... you were to wake up facing your flipped clone? How long before you would realize you're not looking at a mirror?

# **Bernard**

Confused, Bernard wonders if that wasn't just a bad dream. Hesitant, he puts his hand against what he initially thought was a mirror. He slides his fingers, expecting resistance.

No friction. A floating feeling. Skin against skin.

Bernard steps backs.

- So... you are... someone? Say something!

Bernard shakes his head.

- You are just like me.

He said with a suspicious tone.

- Say something.

# Wu

- But then we were thinking... Fine. Even though you knew you were facing your chiral duplicate - could you even hold a conversation? Like... two perfectly similar brains you know...

# **Bernard**

- I'm mister A. Whatever you're saying...
- I'm mister A. Whatever you're saying...

Bernard stops mid sentence. Both voices superimposed. The two pairs of lips are in sync.

# Wu

- That gets you thinking, doesn't it? How would you escape your own brain echo?

# **Bernard**

Bernard, looks at his hands. Frustrated.

- There must be a way to identify myself.

#### Wu

- A chiral clone. How long before you understand you're looking at a human being? Past the disbelief, what would it take to be able to converse with your clone?

Eyes wide open in excitement.

- I had to try, you know. I had to try.

# **Bernard**

Bernard smiles.

- I'm Mister A! See, look at this!
- I'm Mister A! See, look at this!

Says Bernard as he's waving the back of his hand at his reflection.

- See that ring? My ring finger! I'm married. And you know where we put the wedding ring? On your damn left hand! Look at you, you're raising your right hand!
- See that ring? My ring finger! I'm married. And you know where we put the wedding ring? On your damn left hand! Look at you, you're raising your right hand!

Both individuals, almost angrily, brandish their opposite hands.

- No. Stop. Stop saying what I'm saying! This is your right hand you fool!
- No. Stop. Stop saying what I'm saying! This is your right hand you fool!

Amused, the voice in the corner says:

"You can identify top, bottom, forward, backward, but what about left and right? Do you have any way to identify what your left side is?"

Bernard, staring at his left hand:

- This has been my left hand my whole life!
- This has been my left hand my whole life!

Bernard puts his hand on his chest.

- My heart is on the left side of my body.
- My heart is on the left side of my body

# Wu

- But hey... haha, you know, there's just no way. Bernard needed some help at this point. So this is when we broke the symmetry.

# **Bernard**

Bernard is at arm distance from his duplicate. On the ceiling, behind him, the lightbulb shines barely enough light for the whole room.

The lightbulb flickers for a few seconds.

Only on one side. Bernard's side.

And only Bernard had to rotate his head to face the dysfunctioning light.

Mister A and Mister B smiled.

# Wu

- Well.

Doctor Wu was looking at the three agents.

- It was fun. Just not sure what to do with Mister B though. This poor soul can't even eat. Your problem now. Time for lunch.

The digital clock on the wall was reading: 00:51

-- END

#### ANNEX:

Why this experiment would not work:

- Radioactive decay could be used to identify left and right. See the Wu experiment: https://en.wikipedia.org/wiki/Wu\_experiment
- No-cloning theorem: https://en.wikipedia.org/wiki/No-cloning\_theorem

#### Chirality:

- On Wikipedia: https://en.wikipedia.org/wiki/Chirality
- The origins of handedness in life: https://phys.org/news/2014-10-handedness-life.html
- Can I digest a substance with the wrong chirality? https://www.reddit.com/r/askscience/comments/wuxkt/can i digest a substance with the wrong chirality/

About fundamental physics and determinism:

- Quantum determinism: https://en.wikipedia.org/wiki/ Determinism#Other\_matters\_of\_quantum\_determinism
- Do quantum effects make our choices our own? https://storify.com/gmusser/the-quantum-physics-of-free-will

#### Free will:

- What Makes You You? http://waitbutwhy.com/2014/12/what-makes-you-you.html