

REALITY 101

THE QUEST FOR A BIG TOE

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www.MyBigTOE.com



Section 1

The Fundamentals of Reality²⁷

The Double Slit Experiment (What Happened)

Light is a wave:

1 Photon →

Double slit

Present

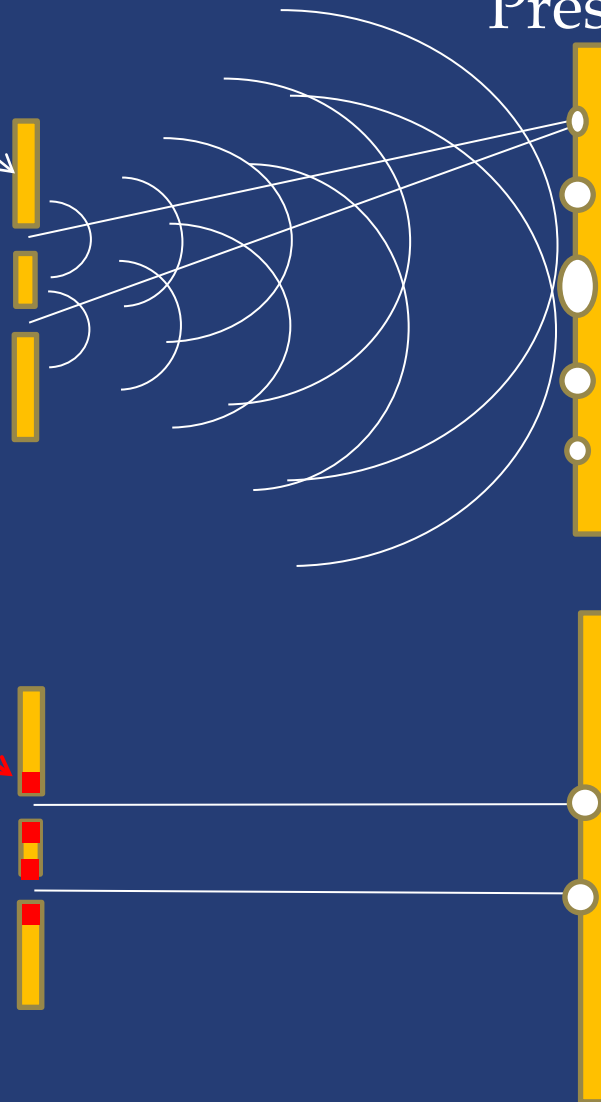
Measurement
Screen

OR:

Light is a particle:

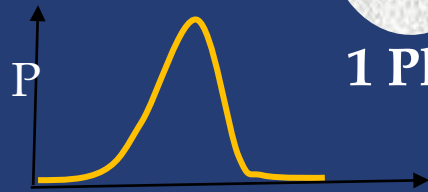
1 Photon →

Photon
Detector



The Double Slit Experiment (Why It Works That Way)

Photon
position
probability
cloud



1 Photon

Double slit

Present



What is the
probability of
light being at
any point on
this screen?

Measurements are made in the present

OR

Measurement
Screen

1 Photon

Photon
Detector

Probability wave
collapses to form
particle in PMR

Present

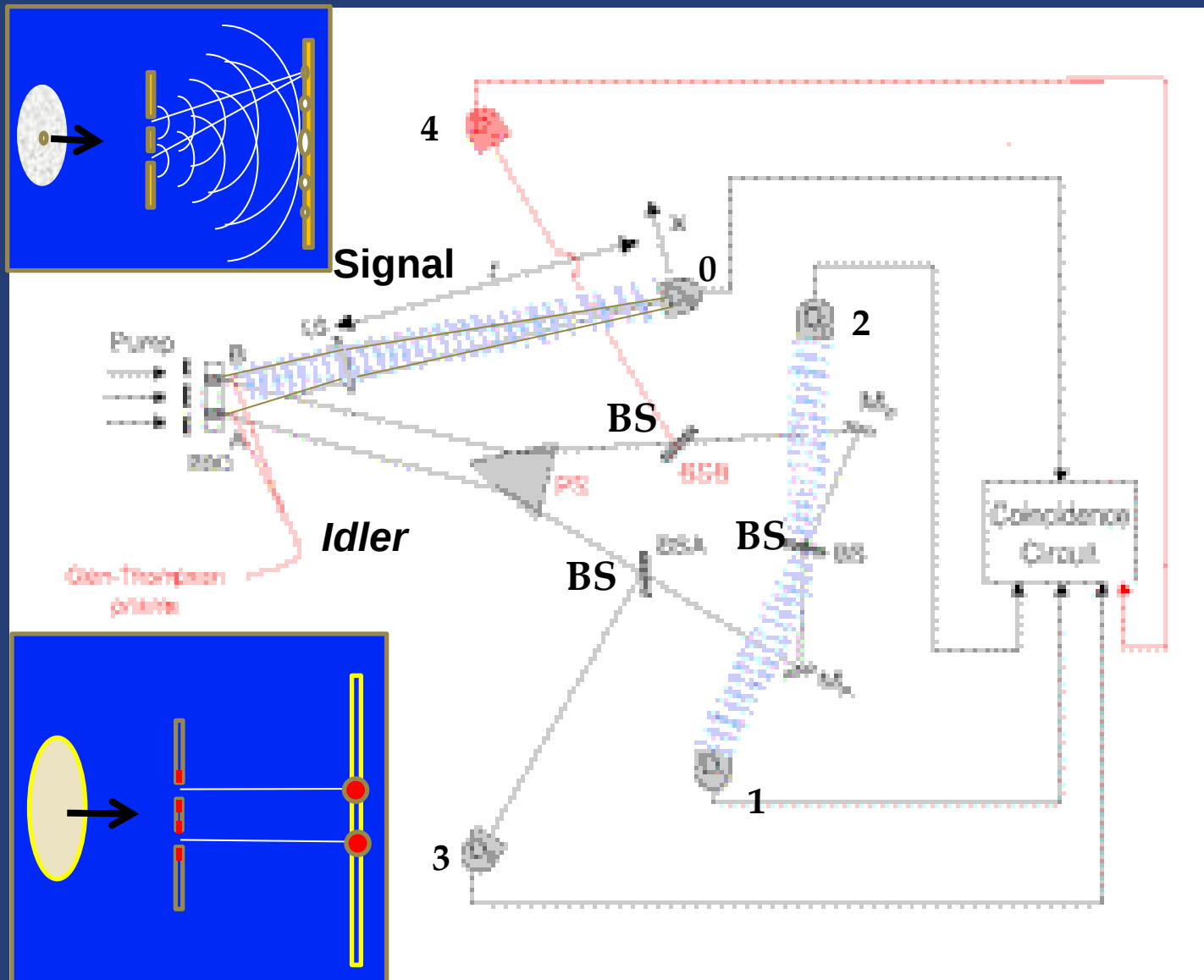
Present measurement
constrains the
probable future

Probable future

What is the
probability of
light being at
any point on
this screen?

The search for a TOE: Conflict Between Relativity and QM

- ▣ Objective reality: Objects exist locally and independently within an absolute space and time – Newtonian perspective
- ▣ Quantum theory assumes an absolute space & time background, which relativity specifically denies.
- ▣ Relativity assumes objects exist locally in space-time, which quantum theory specifically denies.
- ▣ Each refutes an **objective reality** assumption the other still clings to. Both claim to support an objective reality because each computes an objective result. (relativity: within a local inertial frame and QM: within an absolute space and time)
- ▣ Both theories accept and reject one of the two assumption of an objective reality. Each exposes the other's false belief, but ignores its own.



A Historical Perspective₁

Albert Einstein – Unified Field Theory

- ▣ “If we think of the field as being removed, there is no ‘space’ which remains, since **space does not have an independent existence.**” – *Albert Einstein*
- ▣ “**Reality is merely an illusion,** albeit a very persistent one.” – *Albert Einstein*
- ▣ “Hence it is clear that **the space of physics is not, in the last analysis, anything given in nature or independent of human thought.** It is a function of our conceptual scheme [mind]. – *Albert Einstein*

A Historical Perspective₂

Eugene Wigner

- ▣ “It will remain remarkable, in what ever way our future concepts may develop, that the very study of the external world led to **the scientific conclusion that the content of the consciousness is the ultimate universal reality.**” -- *Eugene P. Wigner a Nobel Prize winner and one of the leading physicists of the twentieth century*

Max Planck:

- ▣ “Science cannot solve the ultimate mystery of nature because, in the last analysis, **we ourselves are a part of the mystery that we are trying to solve.**” – *Max Planck*

Quantum Mechanics Then

Niels Bohr:

- ▣ “The common sense view of the world in terms of objects that really exist “out there” independently of our observations, totally collapses in the face of the quantum factor.”
- ▣ “If quantum mechanics hasn't profoundly shocked you, you haven't understood it yet.”
- ▣ **“Every great and deep difficulty bears in itself its own solution. It forces us to change our thinking to find it.”**

Albert Einstein:

- ▣ **"No problem can be solved from the same level of thinking that created it."**
- ▣ **"One has to find a possibility to avoid the continuum (together with space and time) altogether. But I have not the slightest idea what kind of elementary concepts could be used in such a theory."** – *Letter from Albert Einstein to David Bohm October 28, 1954*

Quantum Mechanics Now

Richard Feynman:

- ▣ “The double slit experiment contains the basic mystery of quantum mechanics”
- ▣ “Shut up and calculate”
- ▣ “I don’t understand Quantum Mechanics”
- ▣ “Quantum mechanics represents a phenomena that is impossible to explain in any classical way” [in terms of objective reality/causality]
- ▣ David M. Harrison, Dept. of Physics, Univ. of Toronto: “It may be true that *nobody* can understand Quantum Mechanics in the usual meaning of the word “understand.” [in terms of objective causality]
- ▣ **The Big Question today:** Why should physical particles be represented by probability distributions – how do we interpret that in terms of an objective reality?

Contemporary Scientific Big Pictures

- ▣ Edward Fredkin – Digital Physics -- 1992
 - the entire history of our universe is computable
 - Reality is:
 - ▣ A computer itself.
 - ▣ Implemented on a computer (a simulation)
 - ▣ Essentially digital.
 - ▣ Essentially informational
 - The computation must be in “other” outside of physical reality
- ▣ Nick Bostrom – Now at Oxford
 - *Are You Living In A Computer Simulation?* One must be true:
 - ▣ It's impossible
 - ▣ If not impossible, then unlikely
 - ▣ If not unlikely, then Almost all entities with our general set of experiences are most likely living in a simulation
- ▣ Brian Whitworth – **The Physical World as a Virtual Reality**
 - the universe is a virtual reality created by information processing, and furthermore this concept is supported by findings of modern physics about the physical world.

Virtual Reality

How does it work?

Virtual Reality

- Data stream **to each** participating **consciousness**
- Multi player computer games – **WOW, SIMS**
 - **The characters and the game setting** – your character and your character's objective reality displayed on your local computer.
You, the body and your environment
 - **The server** – generates the set and enforces the rule-set defining characters, interactions, and set. Also serves as the interface between characters and players – **the larger consciousness system**
 - **Local computer** Stores character's content and experience and self modifications (unlike WOW, no cheat and no bandwidth issues) – **(FWAU what you associate with brain function)**
 - **The players** – provide intent and free will – higher self/intuition/guidance/direction -- **you, the FWAU, the individuated local PMR consciousness**

The Nature of Virtual Reality

- ▣ All reality starts as probable future reality -- and you can modify those probabilities with your intent. (placebo effect, positive thinking – mind matter interaction)
- ▣ Does Oxygen need to be rendered for the characters in WOW or Sims to breathe?
- ▣ Computational requirements are greatly reduced since only effects need to be rendered and only to individuals making a measurement
- ▣ **When something is rendered, it must be: 1) consistent both historically (with existing data) and 2) consistent causally with the rule-set – (must appear to have a consistent physical basis or physical justification). These criteria are specific to the situation.**
 - These two constraints define the natural uncertainty of the data, object, or process.
- ▣ Note: the consciousness system is playing all parts in this game – it controls the historical record and the rule-set – however meddling would ruin the integrity and thus the value of the VR
 - You , as consciousness are both the creator as well as the experiencer of the creation

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MY BIG TOE

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