The Observer is the Creator

Measurement problem solved by QBism

Forward

This is a transcript from the YouTube video; https://youtu.be/0yrkme0N-OA?si=KYBv3MVZIYKbYyTt

Parenthetical and italicized text are mine.

I submit the following for your consideration in your modern understanding of the knowledge that Shakyamuni Buddha was trying to convey some almost 3000 years ago to a largely illiterate people as well as all caste up to the intellectual (*Brahman*) caste of India.

My constant goal is to make the history and scholarship of Buddhism and its founder's teachings as easy to understand as this modern era of Mappo can transmit. With the access to our great scholars in both Buddhist lineage as well as those academically trained, this wealth of information can be overwhelming. It is my task to reduce the noise or extraneous pursuits of politicized agendas to deliver a paired back but no simplified, straightforward teaching without distraction. The sciences today, from physics and cosmology to psychology and neurology, provide a glut of observable truths that apply directly to our Buddhist practices and rhetoric. I provide here a direct transcription of video talks from the Internet with interruptions of personal insight regarding Buddhist teachings and practice, as a guide to interrelate our practice with the provided text.

Sifu, Bodhisattva, Sylvain Chamberlain

Love and respect,

NaMuMyohoRenGeKyo

Transcript Annotated

Introduction: What If Reality Needs an Observer to Exist?

What would happen if we discovered that the universe does not exist in an objective, silent and predefined state, but takes shape and consistency only at the exact moment in which we decide to question it. For over a century, quantum mechanics has returned to us the image of an elusive microscopic reality governed by chance

and described by complex wave functions, equations that seem to suggest that a particle can be in multiple places simultaneously until it is observed. But what if these probabilities which we take for granted today when talking about quantum physics were not an intrinsic and solid property of matter at all? What if the famous wave function did not describe the real and tangible world out there in any way but was solely a mathematical tool, a conceptual bridge to quantify what we as observers can expect to experience?

And what if pushing this premise to its limit, the very act of scientific observation were not a simple passive recording of an independent cosmic fact, but an active, essential, and creative participation in the construction of reality itself. We are about to explore the theory of Qbism. One of the most radical, fascinating, and potentially revolutionary interpretations of modern physics, capable of shaking the foundations of what we call existence.

> *(I just love it when non-Buddhists talk about scientific discovery, without realizing that they are describing Shakyamunibuddha's teachings.)*

The Measurement Problem Solved

Everything begins with one of the oldest, most famous and still debated problems of quantum physics, the measurement problem. When we do not observe a quantum system such as an electron or a photon, it seems to exist in a fog of probabilities, a superposition of multiple and mutually exclusive states that spread through space and time. This evolution is described in a perfect and deterministic way by the famous Schrodinger equation.

Wave Function Collapse and the Birth of the Paradox

But at the exact moment we insert a measuring instrument or simply perform an observation, this wide range of possibilities fades, mysteriously collapsing into a single definite, measurable result. This brutal transition between the potential and the actual has split the scientific community for decades. To try to explain it, dizzying interpretations were born.

There are those who postulate parallel universes in constant and infinite splitting where every measurement gives life to cosmic branches. And there are those who imagine the existence of non-local hidden variables, an invisible web that unites every point of the universe, violating our common sense of distance. Yet just when the debate seemed stuck between extreme visions of reality, an emerging perspective decided to completely flip the table, drawing on a concept apparently distant from pure physics, the Bayesian theory of probability.

> *(The "collapse of the Wave Function. This is like saying that before you look at some thing, what ever it may be, it must either exist or not exist. And then, once*

you see it, identify it, or conversely, do not see it or identify it, the "decision" is made. This is the Schrodinger riddle so often invoked here about the cat in the box. If the potential exists for some thing, then that thing is in "superposition" or probable as yes or no, exists or not exist. Simple logic really. This is identical with Buddhist reasoning.)

What Is QBism: Quantum Bayesianism Explained

Qbism also known as quantum Bayesianism was born at the dawn of the new millennium from the intuition of theoretical physicists like Christopher Fuchs, Ruediger Schack and Nathaniel David Mermin . Their proposal is of a disarming conceptual power. They force us to rethink from the foundations what physics itself is. According to Qbism, the quantum wave function is not a real physical entity. It is not a material wave traveling through the cosmic vacuum and it is not even an objective snapshot of the universe independent of us.

It is very simply but just as profoundly, a user manual. It is a rigorous formal tool that a rational agent uses to calculate and update the probabilities of their own future experiences. To understand the scope of this shift, we must return to the heart of Bayesian probability.

The Bayesian Framework and Why Probability Is Subjective

In the Bayesian approach, unlike the classical frequentest one, a probability is not an objective datum inscribed in the nature of things. It is not the intrinsic tendency of a die to fall on a certain face. On the contrary, it quantifies a degree of belief or expectation of a cognitive subject based on the specific and partial information in their possession. When new evidence becomes available, the agent dynamically updates their expectations through a very precise mathematical mechanism translated into the quantum domain. This approach performs a conceptual magic. It solves the measurement problem by dissolving it.

Measurement Problem Solved Through Epistemic Collapse

The infamous collapse of the wave function stops being a traumatic, simultaneous, and apparently impossible physical event in which the universe changes global configuration in an instant. It becomes much more elegantly an epistemic event. It is the moment when the observer after having physically interacted with a system acquires new information and updates their personal knowledge. The wave function

collapses only in the mind of the one calculating it, not in the objective fabric of spacetime.

> *(This is the way karma works in our lives. From moment-to-moment you make incalculable decisions based on your accumulated data, experience, predilections and prejudices, all to "collapse" into the moment you actually experience the effect. The "cause" is the inertia of all components brought into action, resulting in the perceived result. Buddhism 101. Cause and effect.)*

It is fundamental to emphasize that the solid nature of this vision does not reside in empty philosophical speculations or in literary flights of fancy but rests on extremely refined mathematical scaffolds. The theoretical formalism behind all this exists is solid and is the real engine of the theory.

Theoretical Qbists have spent years reworking the famous born rule, translating it into the language of subjective probabilities through complex analytical constructs and advanced geometric operators. There is no need to delve into the complex algebraic derivations to grasp the point. These equations exist. They are unassailable on a formal level. And they demonstrate that quantum theory works flawlessly, even more cleanly. When its foundations are reinterpreted in a subjectivist key, quantum physics is no longer the mechanics of a world without us. It reveals itself to be the rigorous mechanics of our inevitable interaction with the world. By accepting this paradigm, one witnesses the immediate resolution of some of the most glaring contradictions that have haunted physics over the last century.

Wigner's Friend and the Paradox of Two Observers

Let's take the famous Wigner's friend paradox. Imagine that physicist Eugene Wigner locks a colleague, the friend, in an isolated laboratory to perform an experiment on a particle in quantum superposition. The friend performs the measurement, observes the result, and from his point of view, the particles wave function has clearly collapsed onto a precise value.

But for Wigner, who is outside the laboratory and has not yet exchanged information with the friend, the entire system composed of the particle, the measuring instrument, and the friend himself is in a colossal superposition of states. We thus have two observers, each with a completely different and apparently incompatible quantum description of the same portion of the universe.

For decades, this scenario represented a short circuit for classical interpretations. For Qbism, however, there is no paradox. The apparent contradiction dissolves the moment we admit that every observer possesses their own personal wave function. because it represents only their expectations and not an absolute cosmic truth. The friend's wave function describes what the friend experiences. Wigner's wave function describes the probabilities for Wigner's future experiences.

There is no privileged point of view.

There is no God's eye observing the quantum chessboard from the outside to decree who is right. Reality within the theoretical framework of Qbism becomes inevitably pluralistic.

A Participatory Universe: Reality as Co-Creation

Every time an agent performs a measurement, every time they take an action on the world by asking nature a question, the world responds in a nondeterministic way. In that precise vital exchange, in that unpredictable friction between the ***observer*** and the rest of the cosmos, a completely new ***fragment of reality is created***. The universe from this perspective is not a puzzle already completed. That science only has to reveal piece by piece and it is not a clockwork mechanism launched millennia ago. It is an open construction site, a work of art perpetually in the making. This profound redefinition of our ***cognitive relationship*** with nature pushes us violently toward unexplored philosophical territories, forcing us to reflect on the very structure of what we considered unshakable space and time.

Space, Time, and Consciousness in the QBist Framework

If quantum physics, our best fundamental theory, is actually a normative account of the interactions between an agent and the universe, then concepts like space and time might not be that empty, immutable, and pre-existing stage upon which matter acts out its dramatic part.

They might be instead emergent properties of our cognitive architecture, structural organizational tools that we ourselves employ to order, give meaning and give shape to the chaotic and uninterrupted flow of our experiences with the outside world. It is crucial to clarify that Qbism never slides into a sterile solipsism in which only the mind exists and the universe is an illusion. On the contrary, it unequivocally recognizes that an objective reality exists out there that offers strong resistance, a cosmos that responds to our stimuli and that often surprises us with results that we had not foreseen. Yet the theory strongly suggests that the ultimate and objective nature of this something out there is constitutionally precluded to us without the lens of our exploratory interaction.

Subject and object are not two ***realms*** separated by an ***epistemological*** bulletproof glass. They are the ***co-authors of the cosmic event***. This approach drags us toward dizzying questions about the role of consciousness and the nature of any agent capable of experience. If reality is essentially a deep participatory process in which the measuring subject and the measured object define and determine each other only in the fleeting instant of interaction, then human consciousness or at least the intrinsic capacity to process, act, and record information can no longer be dismissed as a trivial evolutionary accident, a marginal

epi-phenomenon lost on a damp rock at the edge of the galaxy. Rather, it seems to ***emerge*** as a vital gear, a structural fulcrum around which reality itself crystallizes.

This framework leaves open the question strictly rational but at the same time emotionally overwhelming. Whether the profoundly relational and participatory nature of reality suggests dynamics of subjectivity that we still ignore entirely. Ontological boundaries of being an absence that currently completely elude our conceptual and mathematical networks. True frontier science never offers certain or definitive answers to these philosophical chasms. It does not give dogmas or cheap spiritual comforts, but its invaluable power resides exactly in the ability to leave room for methodical doubt and to constantly reformulate our questions better infinitely.

Free Will, Becoming, and the Open Cosmos

Embracing the extreme implications of Qbism means making a radical decision. It means abandoning the reassuring intellectual comfort of an inanimate, cold, and implacably predetermined universe, an infinite mechanism in which we are only cumbersome and marginal extras. It means on the contrary discovering the vertigo of an intrinsically creative and incomplete cosmos in which the fundamental uncertainty of quantum mechanics does not represent a sad biological limit of our mind but constitutes the true raw material of freedom, free will and becoming.

Perhaps we are not simple spectators confined to the stands of a distant and inaccessible universal theater, but we are the neural and pulsing nodes through which the universe itself attempts to understand its own nature, fulfilling and realizing the actual act of its own creation with every question we ask, with every experiment, with every stubborn look of ours toward the unknown. known.

And above all, never stop observing reality with curiosity and wonder.

> *(There are so many corollary thoughts in this transcript to the school of Quantum Buddhism, The Threefold Lotus Kwoon, that if I were to attempt a thorough annotation of each of them, I would essentially rewrite the entire piece. I hope you enjoyed reading or watching this discussion as much as I did. And as always, feel free to contact me with thoughts and questions. NaMuMyoHoRenGeKyo.)*