

DUALITY OR UNITY IN QUANTUM MECHANICS?

By Jonathan Deutsch

ABSTRACT

In the double slit experiment - - central to quantum mechanics and thus to all of reality - - when you LOOK at the particle, it always passes through ONLY ONE slit - - EITHER the right slit OR the left slit, acting like a particle. However, when you AREN'T looking at it, it somehow always passes through BOTH slits - - the right slit AND the left slit - - at the same time, acting like a wave. All of nature is now KNOWN to be both wave and particle simultaneously - - actually, one entity ("wavicle"), not two - - at the most fundamental level of reality.

However, no one seems to have ever asked the question: How can anything, much less everything, be in TWO places at the same time AND ALSO SIMULTANEOUSLY be in ONLY ONE place at the same time? The known laws of physics make this absolutely impossible. Therefore, at least one of our laws must be wrong. In some fundamental mathematical and physical sense, 2 MUST ALSO BE (- - EQUAL- -) 1: 2 AS 1. The right and left slits, seemingly opposite, must at the deepest level of reality be "married" to each other - - one slit, not two.

Extending this argument to Schrodinger's cat, life and death, seemingly opposite, must at the deepest level of reality be "married" to each other, 2 AS 1. Just as all apparent opposites, it must be true that ultimately, life and death must be one thing, not two. This, then, is an all-optimistic physics - - probably the first such theory ever. But it is based entirely on firm scientific fact.

DUALITY OR UNITY IN QUANTUM MECHANICS?

The double slit experiment is THE central event in quantum mechanics.¹ Our universe is thought, since physicist Niels Bohr, to be 100% quantum-mechanical.² Therefore, double slit results should reveal fundamental truths about our entire universe.

The double slit experiment includes a particle - - usually an electron or a photon (particle of light), - - a right slit and a left slit opposite to it. When you LOOK at the electron, it always passes through ONLY 1 slit at a time, never 2 - - i.e., the electron acts like a particle.³ But when you AREN'T looking at it, the electron is known to somehow pass through BOTH the right slit AND the left slit at the same time - - i.e., the electron

¹ Feynman, R., Lectures (1964), p.130

² Kafatos, M. and Nadeau, R. The Conscious Universe, Springer-Verlag New York, Inc, (1990), p.89

³ Farwell, Dr. L. How Consciousness Commands Matter, Sunstar Publishing, Ltd., (1999), p.89

acts like a wave.⁴ This duality is unified by the extremely strong, extremely well-tested modern conviction that light, and indeed EVERYTHING in nature, is both wave and particle simultaneously; as a matter of fact, wave and particle are really one entity, not two,⁵ sometimes called a “wavicle”.

At first glance, this seems to resolve things. However, in truth, it leaves a glaring problem that, to the best of the author’s knowledge, NOBODY HAS EVER NOTICED. The problem: How can ANYTHING, much less everything, be in two places at the same time AND ALSO SIMULTANEOUSLY be in ONLY ONE place at a time? Obviously, it can’t, according to the known laws of physics. But this is exactly what is happening. Therefore, at least one of the known laws of physics must be wrong. HOW is it wrong? This dual event can occur ONLY if the 2 slits also are just 1 slit - - ONLY if 2 mathematically also equals 1: 2 AS 1. In short, this IS possible, BUT ONLY IF THE RIGHT SLIT AND THE LEFT SLIT OPPOSITE TO IT ARE “MARRIED” TO EACH OTHER, 2 AS 1. At the most fundamental level of reality, there must be only 1 slit, not 2. There is, therefore, no way around the realization that NATURE IS EXACTLY THE SAME WHETHER YOU’RE LOOKING AT IT OR NOT: “MARRIED”, 2 AS 1, with duality unified.

It is not really surprising that ONE new idea would solve problems in quantum mechanics. Physicist John Wheeler stated: “Behind it all is surely an idea [i.e., only ONE idea] so simple, so beautiful, so compelling that when in a decade, a century, or a millennium we grasp it, we will all say to each other, how could it have been otherwise? How could we have been so stupid for so long?”⁶ Physicist Richard Feynman put it this way: “the truth always turns out to be simpler than you thought.”⁷ It’s just that no one has apparently come up with that one simple new idea until now.

That one idea: Nature is “married” - - 2 as 1. Two pieces of evidence strongly support this startling but ultimately satisfying conclusion. Banesh Hoffman, assistant to Einstein at Princeton, stated: “It is a strange and awe-inspiring thought that you and I are...rhythmically exchanging particles with one another and with the earth and with the beasts of the earth, and the sun and the moon and the stars, to the uttermost galaxy.”⁸ In short, all of nature’s ingredients are “married” to each other; all dualisms are unified.

⁴ *ibid*, p.89

^{5A} Cooper, Leon M., *An Introduction to the Meaning and Structure of Physics*, Harper & Row, (1968), p.194

^{5B} Cole, K.C., *Sympathetic Vibrations - - Reflections on Physics as a Way of Life*, William Morrow and Company, (1985), p.59

⁶ Cramer, John G., *The Quantum Handshake - - Entanglement, Nonlocality and Transactions*, Springer International Publishing Switzerland, (2016), Foreward, p.viii

⁷ Feynman, R., *Lectures*, *ibid*, p.171

⁸ Hoffman, B *The Strange Story of the Quantum*, Dover Publications, Inc., (1959), p. 186

The second piece of strongly supporting evidence has to do with the true nature of consciousness, and thus, of looking (vs. not looking). “The dividing line between life and non-life, consciousness [--looking--] and non-consciousness [--not looking--] is illusory and arbitrary.”⁹ So states Bell’s Theorem, widely regarded as universally true, conceived of by 20th-century physicist John Stuart Bell. It is known that the implications of Bell’s Theorem are staggering and far-reaching, and very far from being appreciated by physicists at this time. If consciousness essentially IS non-consciousness - - the two being “married” to each other, 2 as 1 - - then looking at something essentially IS not looking at it. Therefore, how can the fundamental truths of nature depend on whether you’re looking at them or not? They don’t, as we’ve just seen. All of nature is “married”, whether you’re looking at it or not.

As regards the “obvious” difference between a right slit and a left slit: they ARE different, but are in a 2-AS-1 relationship with each other. Therefore, at the most fundamental level of reality, there is only ONE slit, not two. Furthermore, turn left-and-right 90 degrees, and you have up-and-down. Up and down are thus “married” to each other as well, 2 as 1. Up and down at the most fundamental level of reality are ONE direction, not two. Since double slit results represent ALL of reality, it would certainly seem that ALL pairs of opposites in the universe are actually “married” to each other. Democritus wrote almost 24 centuries ago that “sweet and bitter, cold and warm...all these things exist but in opinion, and not in reality.”¹⁰ And Richard Feynman, the brilliant twentieth-century physicist, stated that “Nature is 99.99 per cent indistinguishable right from left.”¹¹ So we certainly can reasonably determine that ALL pairs of opposites in the universe are “married” to each other, 2 as 1, and thus, unified.

How about the ultimate pair of opposites - - life and death? Are they too “married” to each other, 2 as 1? Are the dead also alive? Are the physically dead PHYSICALLY alive, not just spiritually alive, as many of us believe? Like wave and particle, right slit and left slit: at the most fundamental level of reality, are death and life really ONE thing, not two? Recall that “the dividing line between life and non-life...is illusory and arbitrary.””

To answer the question, we look at Schrodinger’s cat, a well-known thought experiment. “Schrodinger imagined a bizarre experiment in which a live cat is placed in a box with a radioactive source, a Geiger counter, a hammer and a sealed glass flask containing deadly poison fumes. When a radioactive decay takes place, the counter triggers a device releasing the hammer which falls and breaks the flask. The fumes will then kill the cat...CAN THE CAT BE ALIVE AND DEAD [before you look at it] AT THE SAME TIME? It is believed that our act of observation [--looking—consciousness--] collapses the

⁹ Mirehiel, J., Bell’s Theorem to the Art Bell Effect (Internet article), p.1

¹⁰ Cole, K.C., *ibid*, p.55

¹¹ Feynman, R., Lectures, *ibid*, p.107

superposition of the two wave functions to a single one, making the cat definitely dead or alive [, no longer both simultaneously].”¹² In short, when you LOOK at the cat, it is always EITHER alive OR dead, never both. But when you AREN’T looking at the cat - - i.e., before the box is opened - - the cat is BOTH alive AND dead (or NEITHER alive NOR dead) simultaneously. But again, one glaring problem remains: how can a cat, OR A PERSON, be both alive and dead (or neither alive nor dead) at the same time AND ALSO SIMULTANEOUSLY be EITHER alive OR dead? Obviously, it’s not possible according to the known laws of physics. Yet standard well-tested quantum theory predicts exactly this result; therefore, at least one of the known laws of physics must again be wrong. How must it be wrong? The facts can be explained ONLY if dead also IS (equals) alive - - 2 as 1 - - if death is “married” to life - - if life and death are ultimately the same one thing.

CONCLUSION

In the author’s opinion, standard quantum mechanics virtually PROVES that physically dead cats and people are still alive. PHYSICALLY alive, not just spiritually alive, as many of us believe. And we as human beings MUST possess the CAPACITY to see the physical life in physically dead cats and people.

Thus, duality and unity are both truths for all of nature. In reality, duality and unity are one - - 2 AS 1. Duality and unity are themselves “married” to each other, with the fundamental truth of nature being unity - - the undissectable unity or oneness of the entire universe.¹³ The author would call this the first-ever all-optimistic view of physics; how else can we interpret the statement: Death is “married” to life, 2 as 1? $E=mc^2$ and atomic bombs are accurate, but hardly optimistic.

Any comments should be addressed to the author at spqrwin@outlook.com. All comments will be answered promptly.

¹² McEvoy, J.P. and Zarate, O., *Introducing Quantum Theory*, Tien Wah Press Ltd., (1996), pp,132-133

¹³ Mirehiel, J., *ibid*, p..3-4

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