



THE CONNECTED UNIVERSE

*Psychologist and consciousness researcher
Cate Montana takes us on a deep journey to
discover the mystical truth at the heart of
quantum physics.*

By Cate Montana, M.A.

“Reality is stranger than we think. It’s stranger than most people can think.

Oneness is the Deep Message uniting all the world’s religions. But the form of religion itself is ego territory. It’s going to take the objectivity of science to get us to see what the Great Mystics have been saying all along is true.

What else can we do in the face of what scientists have discovered about reality? It’s unbelievable! Fantastic!

Here’s a really brief peek at the shocking things we now know—facts that change everything we believe about life and self, standing it all on its head just like Copernicus did our view of the solar system all those many centuries ago.

If everybody in the world understood the next few pages as well as the plot line for *Harry Potter*, our planet would change overnight!

Early in the 20th century the unquestioned assumption that the physical universe is actually physical lead to a scientific search for the elementary “point particle” upon which all life is built. But as soon as scientists be-

gan smashing electrons and other particles in enormous accelerators, they quickly realized the foundations of the physical world weren’t physical at all.

The solar-system picture of electrons and protons as tiny, solid, planet-like structures whizzing around a larger interior neutron in an atom was dead wrong. Electrons, muons, tauons, quarks, and gluons have no internal structure and no physical size. They are zero-dimensional and more like *events* than things.

As if that weren’t bad enough, electrons (those negatively charged particles that aren’t really particles) were discovered to be both a wave and a particle *at the same time* (wave-particle duality.) Electrons showed up in one form or the other depending on the experiment involved. They were also hard to pin down.

Scientists can know a particle’s velocity or its position, but not both at the same time. Which is like a cop clocking a car doing 150 mph on the Interstate, but not being able to locate it to give chase. Another strange hab-

it particles have is they can be in more than one place at the same time. Called “superposition,” electrons and other non-particle particles are capable of being in hundreds of places *simultaneously*.

It seems like the more physicists discover, the worse things get for those of us hoping to hold onto any sort of sense of normal “reality.”

In fact, toward the end of his life, when Einstein was asked what was the biggest physics question he wished could be answered before he died, he replied, “I’d be happy if I just knew what an electron really was.”

Reality is stranger than we think. It’s stranger than most people *can* think.

Scientists have been dealing with the shocking implications of quantum theory for 100 years now. But as far as mainstream society is concerned, scientists’ stupefying conclusions about life may as well not exist.

It’s the same old same old as far as the ego matrix is concerned. And yet quantum physics has amazing things to say about reality that can free our minds from its superstitions

and restrictions. Wave-particle duality casts doubt upon the very foundation of the scientific method itself: objectivity and the necessary separation of the scientist from the experiment.

Huh? Excuse me? Isn’t objectivity *the* Holy Grail of science?

Yes. It is. But at the sub-atomic levels, interaction and observation have been shown to affect and even determine experimental outcomes. Which ultimately points to the possibility that there are no such things as *separation and objectivity*. Which blows everything out of the water.

I’m not going to get into the Copenhagen Interpretation and the wave function of particles. But taken to its logical conclusion, the Copenhagen Interpretation of quantum mechanics seems to imply that “reality”—the world as we know it—can only take place if some sort of measurement or observation takes place on the macro level of existence, the level where scientists and all of us more ordinary human beings operate.

In other words, it’s possible that unless



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some agency (such as human consciousness) interferes, particles remain in a probabilistic state and never actualize into one location in particle form at all. Ultimately, reality as we experience it seems to be the result of human consciousness interfacing with the quantum levels of existence that are pure waves of energy.

“You think that’s air you’re breathing?” Morpheus asks Neo in their martial arts sparring scene in *The Matrix*. “Huh.”

Think again.

Morpheus is trying to get across to Neo that everything he thinks is real is actually only information that the brain receives and translates into a picture called reality. Amazingly, scientists are beginning to think the same way.

The Copenhagen Interpretation isn’t the only indicator that an information-based matrix of reality is what we’re dealing with. Entanglement is another freaky physics conundrum pointing that way. Once particles have interacted they become “entangled,” which means forever after they affect each

other’s “spin” (which really isn’t a spinning motion at all but something called angular momentum).

It’s as if once two particles have kissed they become lifelong pen pals. No matter how far apart they get, if scientists change the spin state of one entangled electron it’s guaranteed its partner’s spin state will change in the opposite direction in response. Every time. Instantaneously. Even if they’re a million light-years apart.

Which means either we ignore Einstein’s theory of special relativity and its prohibition against faster-than-light travel for an information-bearing signal and accept that particles are somehow breaking the speed limit and communicating instantaneously across vast distances, or everything is somehow connected at the subatomic level.

And I mean everything. And entanglement is revealing why.

Replicated studies show that living cells can instantly communicate over distances. One of the simplest experiments involves a batch of algae cells grown in a petri dish. After a few

days the cells are divided into two batches. One batch remains in the original dish and the rest of the cells are whisked away to a different laboratory.

When the original group of cells is stimulated by a low-voltage current, the separated group of cells in the lab miles away reacts in *precisely the same way, to the same degree, at the exact same instant* that the stimulated cells react to the charge. And when the separated batch is stimulated the home team cells react instantaneously as well.

What on Earth is going on?

If everything from entangled electrons to atoms to living cells is actually hooked up and intercommunicating somehow, then connectivity just might be the key to a whole new way of understanding the universe.

So far, the hunt for a medium of information exchange has lead scientists on a merry chase cooking up vortices and waves theories, space-time twists, superstrings, and quantum foam. Even the ancient concept of the ether has been resurrected as a possible answer to entanglement. But the simplest,

most elegant theories take us straight back to the matrix.

Noted English mathematical physicist Sir Roger Penrose theorizes that at the level of the Planck scale (an unfathomably small and unimaginably energetic scale at which even quantum field theory breaks down) the entire universe is actually pure, abstract information.

Not information in the usual sense of the term. Penrose isn’t talking about words or binary code. It’s not electromagnetic waves carrying pictures or other electronic signals. Things like microwaves are positively gigantic compared to the Planck scale. Rather Penrose believes the Planck scale is the *abstract realm of ideals* that Plato talked about: an intangible substrate of absolute coherence and mathematical geometry from which the physical world is derived and formed.

Dr. Stuart Hameroff, anesthesiologist and consciousness studies expert, professor at the University of Arizona, and co-author of numerous articles with Penrose, says, “We really don’t know what the right answer is at this

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point, except to say that at that scale there’s some kind of coarseness or irregularity. And what Penrose says is that this is Platonic information... embedded non-locally or holographically, so that all of the information is everywhere, wherever you go.”

American theoretical physicist David Bohm has also created a model where the entire universe and every particle in it comprises an “explicate order” resulting from active information contained holographically in an underlying “implicate order.”

Which means that everything that exists contains the information of everything else that exists. The information of the entire universe is contained holographically in every single cell.

It’s hard to grasp when we’re sitting in traffic or waiting in the doctor’s office to get a flu shot, but science is revealing that our world is more of an *idea* than anything else.

As the famous Austrian theoretical physicist Erwin Schrödinger put it, “What we observe as material bodies and forces are noth-

ing but shapes and variations in the structure of space. Particles are just *schaumkommen* (appearances).”

I used to lie in bed at night for hours wondering how my hand and my pillow, the parquet tiles on the floor in my bedroom, and the sultry night air wafting over my body could all be nothing but intangible information.

How was it possible? It was crazy! I mean, come on. This stuff is real!

But what is real? How do we define it? As physical beings—oops—as *apparently* physical beings of course we would define reality in physical terms. But given the inescapable scientific proof we have now gathered, it seems this world (and everybody in it) isn’t physical at all.

Which means this world
And me
And you
Must be something altogether different
And we just don’t know it...
Yet.



“Matter and energy, information and consciousness are just different ways of looking at the same thing.

*Merrily merrily merrily merrily
Life is but a dream.*

— **Nursery rhyme**

Reality is merely an illusion, although a very persistent one.

— **Albert Einstein**

Whether we call it the unfolding implicate/explicate order, “irregularities in the fabric of space,” Planck scale information, or Platonic ideals doesn’t matter. Invisible, intangible and unfathomably powerful energies lie at the foundation of the universe, interconnecting and interpenetrating all life—unfolding as life.

And these energies are best understood as information/intelligence/consciousness itself.

As Swami Muktananda puts it, “The Self, Shiva, is supremely pure and independent, and you can experience it constantly sparkling within your mind. It cannot be perceived by the senses, because it makes the senses function. It cannot be perceived by the

mind, because it makes the mind think. Still, the Self can be known, and to know it we do not need the help of the mind or the senses.”

Bottom line, matter and energy, information and consciousness are just different ways of looking at the same thing. And if we include the experience of mystics who have directly grasped and taught about the unified consciousness of creation for millennia, we can add the word “self” to this interchangeable mix as well.

SELF = Intelligence = Information = Energy = Mass = Life = God = Spirit = Consciousness

It’s all the same thing. It’s all ONE thing.

Practice: Redefining Reality

When I’m driving or lying awake in bed at night, instead of trotting out the same old tired ego worries I consciously shift gears and contemplate Bigger Things. Which is a great way to start moving into an expanded consciousness and alignment with reality as it really is.

There’s a lot to contemplate in this. Take notes. When you’ve got some down time (which you’re creating) think about this stuff. Here are a few topics to prime the pump:

- » You’ve never actually touched anything in your entire life. Electron repulsion between your fingertips and another person’s hand or a piece of clothing or a hairbrush makes touching any other thing impossible. Plus, at the subatomic level, everything is really energy and nothing is really tangible anyway.
- » What gives you the impression of touch?
- » Why do we experience the world as tangible if it’s not tangible? How is this possible?
- » What makes something “real?” What is meant by the word?
- » Is the world “real” if it isn’t “physical?”

- » What force or medium could possibly create and support the appearance of tangible things that are but mere *schaumkommen* (appearances)?

Excerpted with permission from The E-Word: Ego, Enlightenment and Other Essentials by Cate Montana (Simon & Schuster, January 2017).

Cate Montana has a Master’s degree in psychology and teaches about the ego, transpersonal and transcendent consciousness, quantum physics, and evolution. She has journeyed with shamans in Peru, Ecuador, and New Mexico, studied yoga in India, explored ancient South African ruins on horseback, hiked solo through England’s sacred sites, lived in isolated cabins in the wilderness, and written two books, *The E Word* and *Unearthing Venus: My Search for the Woman Within*. She also co-authored *The Heart of the Matter* and worked with the filmmakers of *What the Bleep Do We Know!?* Visit her website: catemontana.com