Some Speculative Implications in Siamese Universes

Initial Speculations

Let us imagine that our reality is not unique, but that another exists —a Siamese universe: two realities sharing a common origin, yet whose arrows of time, causes, and effects are disjointed, like reflections that never quite overlap. The mere possibility opens a range of implications: what does causality mean if there are universes where sequences unfold in reverse? What happens to the notion of identity if our matter could resonate with that of a twin universe?

Speculative cosmology invites us to reflect on the fragility of the concept of reality. If there are universes intertwined within the same matrix, then what we take as physical solidity could be nothing more than a crossing of perspectives.

In this scenario, one may ask: is it possible that matter—its mass and consistency—does not belong exclusively to our universe, but arises from the coexistence of two Siamese universes, where the existence of each depends solely and exclusively on the dual effect? Perhaps what we perceive as solidity is nothing more than the shared projection of two interlaced realities.

From this perspective, quantum entanglement could be understood not as an isolated mystery, but as the extreme manifestation of that union: particles not only connected through our space-time, but also through the symmetry that has linked both universes since the beginning of their time.

Just as there are particles and antiparticles, entanglement would act as the **wild card of the quantum game**: the card that ensures dual coherence. Thus, when one particle shows spin up, its companion appears spin down, intrinsically and inescapably, independent of distance. Could they, in fact, be the very same particle? That correlation would not be a mere statistical coincidence, but the exact sign that both are connected through the two universes from the origin, in a game that transcends dimension itself.

That is precisely why, if one day we discovered a way to cross dimensional boundaries, we would find that the arrow of time always remains unidirectional. And yet, if we were to behold such a hypothetical universal traveler, we would perceive them with an inverted arrow of time. Perhaps —and here lies the limit— the very possibility of visualizing such a scenario is not forbidden by accident, but is part of the very essence of physics.

Nevertheless, one might imagine the possibility of designing **relations or experiments** that could reveal this Siamese connection. The most natural candidate is quantum entanglement itself, but here physics imposes a strict boundary: entanglement cannot be used as a direct channel of communication between universes, nor to transmit information faster than light. Its power lies elsewhere: in the perfect correlations that persist regardless of distance, as fossils of a shared origin.

In this framework, three paths of exploration open:

1. **Laboratory experiments**: tests of Bell inequalities with photons and entangled atoms, quantum teleportation, or Bose-Einstein condensates. Today we can reach orbital distances —as in the *Micius* satellite— and macroscopic systems, searching for any statistical deviation from the standard formalism.
2. **Quantum cosmology**: the cosmic microwave background and the distribution of matter may contain traces of primordial correlations, relics of an entanglement forged in the Big Bang or in a primordial condensate.
3. **Extreme scenarios**: black holes and quantum bounces (LQC) could be places where entanglement survives “eternally,” sustained by holography or collective condensation.

What we can do today is **push entanglement to its experimental limits** and search for reproducible anomalies: deviations in Bell correlations, unusual patterns of decoherence in condensates, or persistent asymmetries in matter and antimatter. None of these results would, by themselves, prove the existence of Siamese universes, but they would constitute indirect traces, windows through which to probe the unthinkable.

Let us also imagine an even more extreme scenario: that one day we could generate a microscopic black hole and launch into it one of the particles of an entangled pair. Conventional physics maintains that entanglement would be broken, diluted in the apparent loss of information. However, if the spin of the companion particle were to remain immutable, coherent, and independent of distance, we would have an indirect indication that the correlation survives the crossing of the horizon.

Within the framework of Siamese universes, this survival of entanglement would not mean that the particle is preserved on our side, but that it prolongs its coherence in the twin universe. The one that remains here would continue to carry the trace of that union, as if the black hole were not a quantum tomb but a translucent frontier that redistributes correlations in the dual weave.

It is likely that this idea, in other forms, has already appeared in discussions on the information paradox or black hole firewalls. But here it takes on a different nuance: it becomes a **Siamese signature criterion**, where spin acts as a witness to a coherence that does not die, but is shared between two universes. Not a definitive proof, but a glimpse of evidence that the impossible may only be the invisible.

Metaphors and Engines of Progress

The poet Paul Éluard wrote: *"There are other worlds, but they are in this one."* Perhaps those words are not just a literary gem, but a key to understanding our own existential nature. Maybe Siamese universes are not "outside" or "beside," but inscribed in the very fabric of reality, in the duality of matter, in correlations that defy space and time.

That phrase reminds us that curiosity, intuition, and passion are the essential engines of human knowledge. We do not need to become space explorers to seek answers; sometimes it is enough to sit and contemplate the stars, letting the mind open to the invisible.

Perhaps the truth is not "out there," as Mulder and Scully once claimed, but "in here," in our capacity to meditate and reflect. And in that exercise, speculation is not a luxury but a compass: what allows us to probe territories that science does not yet know how to describe.

The great Yogi Berra put it in his own way: *"When you come to a fork in the road, take it."* That irony sums up the courage of embracing paradox, of accepting that sometimes one must walk divergent paths without fear of error. Knowledge does not advance only through certainties, but through risky decisions that often seem contradictory.

Plato had already warned in his cave allegory: what we see are shadows, partial reflections of a greater reality. To interpret them requires both rigor and imagination. And perhaps, in the end, those shadows will never fully materialize into something tangible or measurable —or new ones will surely appear. Yet, as Machado said, what matters will always be the path.

And it is on this present path that we begin to coexist with other kinds of intelligences, where it seems essential that science adapts to the new times, and not the other way around. Thinking outside the box will become increasingly relevant, just as learning how to transmit, how to communicate, and how to open the framework of academic knowledge to unexpected new actors will soon be only a matter of time.

Many thanks for everything, **Avi**.

A small and humble autodidact greets you,

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