

Letter to the editor

Information paradox and quantum mechanics in the supramolecular realm

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Abstract: One of the fundamental flaws of quantum mechanics rises when one attempts to apply quantum mechanics in black holes. That contradicts with many fundamental laws of physics. Primarily with the laws of conservation of energy and mass, but also with the claim of quantum mechanics, which states that information contained in the wave function of a certain wave cannot get lost. However, we know that this does not apply in black holes as even though they consume everything, we no longer believe that nothing can escape from a black hole. We now know that they radiate. Very recently this type of radiation has been described by Steven Hawking (and named after him) and can be detected via gravitational cosmic waves.

Keywords: Quantum mechanics; conservation of energy; radiation; black holes

The information paradox and thermodynamics

The information paradox is based on the fact that somehow information gets lost in a black hole, like as if everything is melted or converted (transition) into something else. In theoretical physics black holes are something like a huge grinder of energy and mass that converts everything into Hawking radiation. Good thing about Hawking radiation is that black holes are not as selfish as we thought (as they give something in return) and eventually they dry out. We know they have a beginning, a lifespan, and an ending. If you take into consideration the relativistic space-time description and the general theory of relativity of Albert Einstein, the only physical way for a black hole to come to an end is to dry out, something that quite possibly Hawking failed to address in an evolving and dynamic way. They do emit, but they do not emit in a constant way. At some point in their lifespan, a black hole will start to emit more than it consumes. That is the only logical explanation if the physics we know or understand so far is correct.

However, here we are confronted by another paradox. On one hand, cosmologists claim that as a black hole consumes energy and its mass gets bigger, so does its gravitational pull (gets bigger). It grows and it expands. Compared to the vastness and emptiness of space, a black hole is an inferno of thermodynamics. We could, in an analogy, claim that it is a place in space of high metabolic activity, and it grows as cancer grows, and it consumes and assimilates anything in its proximity as cancer consumes its surroundings due to the excess of metabolic activity. But how come cancer keeps on growing and eventually kills its universe, but a black hole won't? Unless it metastasizes. So maybe something that Hawking missed in his theory is that, through Einstein-Ros bridges, black holes can metastasize throughout the universe, and they don't actually go away. They just go somewhere else, and this cosmological cancer continues. In medicine cancer is a disease,



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but in biology, it is just another factor for natural selection, and the universe would be too boring and too stable if it wasn't for those converters of information that are strategically scattered throughout our cosmos.

In a similar fashion that a cell will uptake proteins, molecules, peptides, and catabolize them, process them, rearrange them, and use the same physical atoms to synthesize and describe different pieces of information (i.e. new molecules), the universe must have its own engines where it can consume expired information and give enthalpy, thermodynamics and evolution a chance to improvise and come up with something new.

A plausible scenario would be that black holes actually don't exist at all. Imagine a wave, any wave, a photon, a huge piece of stardust, or a space rocket that flies across the universe towards a black hole, or a spacecraft that cannot escape the pull of a black hole. We know that due to its enormous mass, a black hole will consume everything that cannot escape its force of attraction. All objects, waves, mass, spacecraft will accelerate as they get closer to the black hole, there is no friction, so eventually, just before they crash into the black hole they will be travelling almost at the speed of light. And as they reach the event horizon, they will actually reach the speed of light and that creates another paradox, because we know from the special theory of relativity of Einstein that at the speed of light time stops. How can you expect something to happen in the future (like crush into the black hole) when there is no future because time has stopped (Figure 1)? Imagine the black hole being your car which moves quite fast through a country road in a forest. Your windscreen is the event horizon. The life of many bugs will end on your windscreen, and they will be converted from living objects into chemicals in your car's event horizon. But the driver is ignorant and oblivious to this fact. Likewise, a black hole may not exist, and this is where Erwin's theory comes into place. Herein, we are describing a unified theorem that even superstring theory only manages to address in small-scale gravitational problems. How can it be that in two different places in the universe time can exist or not exist?

At the event horizon too much information is being smashed and melted and maybe a new notion in physics should be introduced, where time does not exist, only clocks exist in such a way that they measure a physical dimension that doesn't exist. What do they measure if not time? An answer could be that forward in time is the direction in which entropy increases and we gain information. And that is why at the speed of light there is no time, because the information has melted. It's not the actual speed that increases, but it is just the amount of non-usable, assimilated information that decreases and that is why time stops. That is the reason, that turtles at the Galapagos islands don't evolve and they live longer. It is the information flow that has been compromised and there is no evolution. "Time" has slowed down. Not clocks but time. This is why, a prisoner in his cell claims that time has stopped, as there is too little information available.

So, someone might ask, what is the algorithm, how does that information grind works? How can information change and be converted to something else? Keeping time as a real dimension blind us to the answer. But take out time and it all becomes clear. Information does not change. It bends. And it blends to its surroundings driven by the one fundamental law of thermodynamics: information entropy. That new, rearranged piece of information may result into a new color, a flower, or a huge explosion, or something new that we would attribute to evolution. Only that evolution does not exist, cause time does not exist.

Imagine that the cosmos is a notion that instead of water molecules, we had the supervision to see information bits floating around reorganizing, recombining, and coding for something different. Our perception that fish need to exchange molecules with their aqueous medium to stay alive, is challenged. And that is why loneliness will kill you. We don't need molecules to stay alive, we consume information packed in meatballs and spaghetti that allow us to postpone the ticking of the clock and that keeps as alive for a little bit longer. Fact of the matter is that information brings complexity and complexity is hated by thermodynamics.

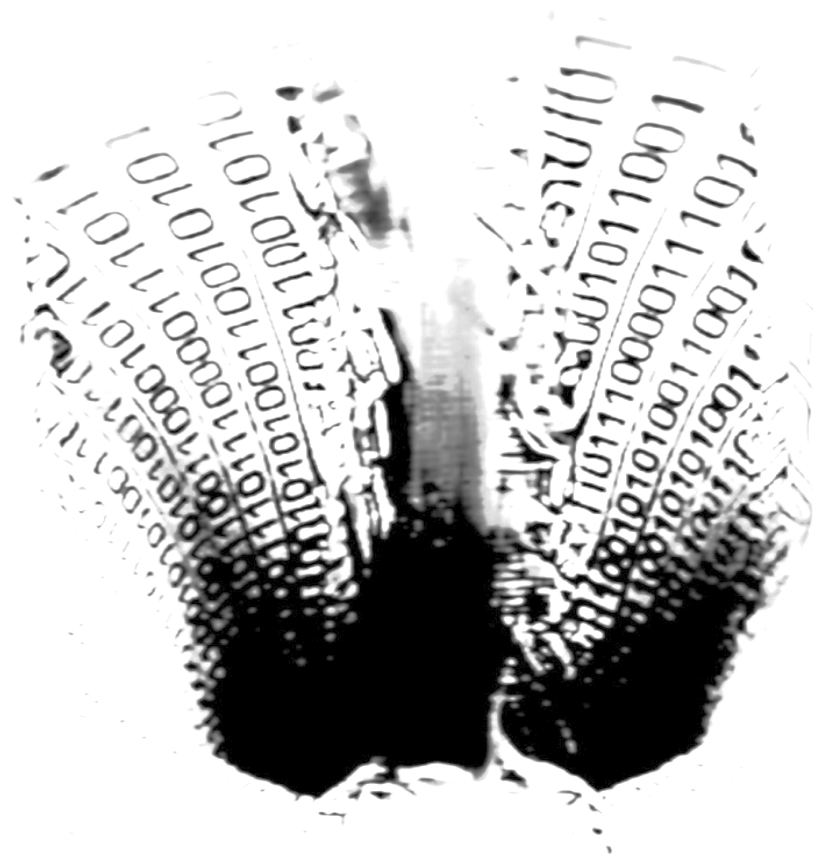


Figure 1. Artistic view of the information crunching at the event horizon of massive black holes

Conclusions

It turns out that, as urban legend has it, ‘live fast, die young’ is not just another smart quote, but this is how the cosmos works. Fundamental problems in theoretical physics fail to be addressed because an erroneous and noisy dimension is always included: time. Take out time, replace it with information, and that can explain how fermions turn into bosons without integer superspins. Given the complexity of the Universe, Fermi’s paradox claims that it is impossible we are the only living organisms. But how come we never encountered an alien? Maybe the distances between galaxies are too vast and traveling is an issue, as travelling takes time. But eventually that also should have happened after many millions of years at this rock. We are isolated due to the insulation of an information-less space that surrounds us. Even if they try to reach us, the vastness of nothingness will keep reducing the amount of information that they started with. It turns out that entropy could be explained as the osmosis of information in our cosmos. Information will leak out, it will be sucked by the emptiness, trying to satisfy the 2nd thermodynamic law of information. Life is not a collection of molecules and cells. It is a reverse entropy information problem/glitch that since the birth of cosmos, physics is trying to fix.

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126
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