Gravity Control: The Greatest Challenge of Contemporary Physics

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Controlling gravity means much more than a major technological advance, it means overcoming a highly relevant stage in the evolutionary process of mankind. Here, we show that, in practice, gravity control means the possibility of building spacecraft that will allow us to explore the Universe; also means a radical improvement with huge benefits for transportation, electric power generation and telecommunications systems.
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By the early twentieth century, astronomers were beginning to realize that the stars we see in the sky were only a small part of the universe. They soon realized that the Milky Way, containing approximately 100 billion sun-like stars, was just one more galaxy among over 100 billion other galaxies scattered throughout outer space. Most of these galaxies are grouped into groups containing up to ten thousand galaxies. Our galaxy is part of a small group called the Local Group.

These findings led the astronomers to believe that the galaxy in which we live is but a practically imperceptible point in the context of the observable universe. What about the solar system which in turn is just a tiny dot in the Milky Way? It is then possible that in this gigantic universe only our planet is habited? To agree with this is not the narrow anthropocentrism that guided the ancient cosmologies, which they attributed to man and his abode - the Earth - exaggerated roles out of proportion to their true importance in the general context?

It is known that there are over 100 billion galaxies in the universe and that a galaxy like ours contains approximately 100 billion stars, then we can estimate that there are 10 sextillions of stars. Modern theories of solar system formation indicate that practically all isolated stars have a planetary system associated with them. However, the number of single stars, i.e., those that do not belong to multiple systems (double stars etc.) is estimated at about 15% of the total. Therefore we can assume that there are about 1 *sextillion stars with associated planetary system*, such as the solar system. Thus, even if there were only one planetary system inhabited per billion, we would still have at *least 1 trillion dwellings in the Universe*.

We see then that, even in a simplified estimate like the one we just made, there is no way of not believing that there are humans on other planets, and that they are more evolved on some planets than on others. Why shouldn't it be like this? Why would Earth have to be unique in a Universe made up of the repetition of so many similar structures and systems? The process of life is undoubtedly the same throughout the universe, and therefore, it must develop on these planets in a manner analogous to that on Earth. As such, other similar humanities must have developed in the Universe, and obviously some must be more evolved than others, simply because they first started.

It does not take much discernment to realize that the Earth is a primitive planet. A humanity lives here at the beginning of the evolutionary scale. Just look at the successive wars that have been going on here for centuries. Nations invade others for the purpose of dominating, looting, destroying, etc. The most powerful countries constantly cheat in an attempt to oppress the weak. Most politicians strive to get rich at the expense of public money; they make all types of cheat looking for their own benefit, and the groups they represent, so *Politics* on this planet simply becomes *the art of deceiving the people*. People suffer without getting back the benefits that should come from the heavy taxes they pay. Much of the tax revenue is intended for the maintenance of the corrupt governments that the people themselves often reelects after being wickedly deceived by deliberately designed election campaigns to deceive and seduce the voter. On the other hand, the big financial conglomerates, always eager for profit, seek to invest in countries where corruption prevails, injecting large sums of money to lend the population at extortionate interest, which the population will pay with great sacrifice.

The simple truth of brotherly love is ignored. On the other hand, most citizens still do not understood that the health of the parties, defines the health of the whole, and that first it is necessary to adjust our individual conduct, strengthen our will, our character, for then be entitled to a government of our level.

Nature here is cruel ... survives the strongest, often destroying the weak. But it is in perfect harmony with the average evolutionary level of those who live here because the beings tend to group together by mutual affinity. Just as cells with a high degree of mutual affinity group together to form tissues and organs, so each planet's ecosystem results from the clustering of related parts. Thus, the ferocity found in the behavior of most terrestrial humans reflects only the fierce nature of the planet. So it is not surprising that so many pathogenic microorganisms exist in this world. It is in this environment that terrestrial humanity exercises its sovereignty. How then could the terrible existence on planet Earth be classified beyond the beginning of an evolutionary scale?

Assuming that Earth is at the beginning of evolutionary escalation, it is to be expected that, in the Universe, there are other humanities, more evolved or even much more evolved, than ours. In this context, by the law of mutual affinity, more evolved planets with Natures also more evolved would house these humanities. More evolved humans living with more evolved animals in an environment where the word "predator" is meaningless.

However, it cannot be denied that terrestrial humanity has evolved greatly since its emergence on the planet approximately six million years ago. Emerged the arts, the sciences, and it was started a improvement in quality of life, providing material and psychologically more evolved environments that, in turn contributed to the development of relevant works

for our humanity. Thus, if humanity has evolved so far, it means that it is very likely to continue to evolve in the future, unless of course a major catastrophe occur causing significant destruction on the planet.

Perhaps we can evaluate our current evolutionary level by the level of development of our science. She is still very young. Basically, it's only a few centuries old. Our spacecrafts can't even take us beyond the moon. But with great difficulty, we've already sent unmanned spacecraft to neighboring planets. The big problem is overcoming gravity. We are stuck in the Earth and what holds us is gravity.

So controlling gravity means much more than a major technological advance, it means overcoming a highly relevant stage in the evolutionary process of humanity. Have more evolved humanities ever achieved this feat?

It is well known that if man encounters intelligent creatures on other planets, they may even have the same degree of technological advancement as ours, but they may also be less or more advanced than us. Needless to say, if they first arrived on our planet, they would have to be technologically advanced.

If throughout the history of mankind no observations of UFOs had ever been reported, then we would perhaps have the privilege of being the most technologically advanced in the entire universe. The other possibility, less honorable, is that Earth and its inhabitants would be so insignificant to the rest of the universe that no one would have deigned to visit us. But while the first possibility would certainly lead us to incur the common error of anthropocentrism, the second possibility tends to exaggerate the role of earthlings in the universe, mainly because this does not live up to the technological development that we acquired by means of the sacrifice of several generations of scientists.

However, what has really been verified are the several and frequent UFO appearances on our planet, a clear indication that we are not the most technologically advanced. These fantastic devices lead us to believe that other beings in the universe have already dominated gravity and make use of this knowledge to build spaceships, which we call UFOs.

We must take this possibility seriously as it carries with it the indication that, just as it did for us, the technological development achieved by other beings on other planets converges on the domain of gravity. In the end, without mutual interference, many will reach this point of convergence.

If we are right then the *free will* is expressed not only at the level of our little planet, but universally.

Respect for *free will*. This must then be our attitude towards other civilizations that have not yet managed to free themselves from gravity. We can never use this technological superiority to influence their individual developments under penalty of violating free will.

In practice, gravity control means much more than the possibility of building spacecraft that will allow us to explore the universe, it also means a radical improvement with huge benefits for transportation, power

generation and telecommunications systems. In the field of energy, the possibility of gravity control, show us that gravitational energy could easily be transformed into mechanical rotational energy through the gravitational motor. A motor of simple construction and few components that will change the paradigm of electric power generation.

How many practical applications can we relate? At the present stage, it is very difficult to say. We can only say that they will be many, and that the coming centuries will make them indispensable.

The greatest challenge of contemporary theoretical physics was to prove that gravity is a *quantum* phenomenon. Since Einstein's theory of gravity describes gravity as related to the curvature of spacetime, the quantization of gravity implies in the quantization of spacetime itself. By the end of the twentieth century several attempts at quantization were made. All, however, proved fruitless.

At the beginning of this century, we clearly realized that the notion of quantization adopted was unsatisfactory and the quantization process contained many ambiguities. Then a new approach was proposed starting from the generalization of the *action function*[*]. The result was the derivation of a theoretical background that finally led to the so sought quantization of gravity and spacetime, which has been published under the title of "*Mathematical Foundations of the Relativistic Theory of Quantum Gravity*" [1].

The Relativistic Quantum Theory of Gravity provides a consistent *unification* of Gravity with Electromagnetism. In this theory, the principle of *strong* equivalence is reaffirmed and consequently Einstein's equations are preserved. In fact, the General Relativity equations can be deduced directly from the Relativistic Quantum Theory of Gravity. Thus showing that General Relativity is a particularization of the new theory, just as Newtonian theory is also of General Relativity. In addition, an important correlation between *gravitational mass* and *inertial mass* was deduced [†].

This correlation shows that Gravitational and inertial masses are not equivalent[‡] as one had thought, but correlated by the factor:

$$\frac{m_g}{m_{i0}} = \left\{ 1 - 2\left[\sqrt{1 + \left(\frac{\Delta p}{m_{i0} c} \right)^2} - 1 \right] \right\} \qquad (1)$$

Where m_{i0} is the *rest inertial* mass and Δp is the change in particle kinetic *momentum*; c is the speed of light.

So only when $\Delta p = 0$ is that the gravitational mass equals inertial mass.

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[*] The formulation of *action* in classical mechanics extends to *quantum* mechanics.

[†] The physical properties of mass have two distinct aspects: *gravitational mass*, m_g, and *inertial mass*, m_i. Gravitational mass produces and responds to gravitational fields. It provides the mass factors in Newton's law of gravitation. Inertial mass, in turn, is the mass factor in Newton's *Second Law of Motion* $(F = m_i a)$.

[‡] This fact does not invalidate the *equivalence principle*. There is a reaffirmation of the *strong* equivalence principle and, consequently Einstein's equations are preserved.

Equation (1) shows that the gravitational mass of a particle can be decreased and even made *negative* regardless of its inertial mass. This is highly relevant because it means that the weight of a body can be equally *reduced* and even reversed under certain circumstances, since Newton's law of gravity defines weight of a body, P, by the product of its *gravitational mass*, m_g, by the local gravity acceleration, g, i.e.,

$$P = m_g g \qquad (2)$$

It also follows from the aforementioned law that the acceleration of gravity or simply the *gravity* produced by a body of mass M_g is given by

$$g = \frac{GM_g}{r^2} \qquad (3)$$

What gravity control can mean to the world is so revolutionary and great that we can hardly imagine it. Almost everything will be changed on the planet. The Gravitational Spacecrafts [2], for example, will travel in space using gravitational energy (non-polluting). The construction industry will employ the new discover to load huge blocks, eliminating the cranes. Rivers will be easily moved from a place to another; food can easily be transported, fighting drought and famine in various parts of the world. And the space conquest will get a big boost. Today, as we know most of the fuel carried by a spacecraft is used to escape the earth's gravitational force. In addition, it is well known that revolutionary pharmaceutical drugs can be manufactured in micro-gravity environments bringing great benefits to the medicine. All of this can only have one meaning: the arrival of a new era for a humanity that will leave behind a period of darkness and move forward with determination to a new horizon of possibilities.

There is a consensus among leading physicists on the planet that by this time chemistry, biology, and even economics have already been incorporated into physics. Then it will be the turn of psychic phenomena to be fully explained by physics. Man will begin to develop his psychic possibilities during regular training at his own school. I imagine the physicists of that time ... A *simply bright future.*

References

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