Laws of Nature: Genesis and Enforcement

Dr Javed Jamil*

doctorforu123@yahoo.com, javedjamil@rediffmail.com

Abstract: According to the news reports, the eminent British theoretical physicist Stephen Hawking argues in a new book that 'God did not create the universe and the "Big Bang" was an inevitable consequence of the laws of physics. In "The Grand Design," co-authored with U.S. physicist Leonard Mlodinow, Hawking says a new series of theories made a creator of the universe redundant, according to the Times newspaper which published extracts on Thursday. "Because there is a law such as gravity, the universe can and will create itself from nothing. Spontaneous creation is the reason there is something rather than nothing, why the universe exists, why we exist," Hawking writes. "It is not necessary to invoke God to light the blue touch paper and set the universe going."' It is unfortunate that the opposition to the existence of God has become such a precondition for the think-tank of the New World Order that scientists who oppose God are being given all the attention, and those that argue against atheism are normally ignored. Hawking says that the creation of the universe is the automatic consequence of the laws of nature. But the question arises: What is the genesis of these laws and how they are being enforced. In my paper, I will discuss the questions related to Genesis and Enforcement of laws.
Academia Arena 2010;2(10):72-79]. (ISSN 1553-992X).

Keywords: Laws of Nature, General Theory of Relativity, Einsteinianism

Physics tells us that whatever is present in the universe is governed by certain laws, known as laws of nature. It is these laws and their combinations that are responsible for the Order in the universe, and it is the understanding of these laws that makes predictions possible; it is also the exactness of these laws that makes it possible to have an opinion about the past. What is beyond doubt about laws now is that these laws are the same everywhere in the universe; and they have been the same throughout the history of the universe; right from the beginning of the "creation", which is considered to have been at the Big Bang Singularity. If these laws are the same and are in place since the very beginning of the Big Bang, it follows that while the universe evolved from a Singularity to the present state and took a long time to evolve, the Laws of Nature appeared instantly without a delay and started governing the evolution of the universe right from the word "go". This means that the laws of the universe had no time to evolve. Who then prepared the set of laws that would lead to the creation of the universe the way it happened? To prepare a set of laws requires

(1) Thorough knowledge of the purpose for which they are being made,
(2) The matter and the regions these laws are going to govern and
(3) The ways they are going to be enforced.

While the social laws are enacted for a society or community that already exists; and the problems of which are known, what is unique about physical laws of nature is that they were decided upon before the creation of the system that these laws were going to govern. The present theory of Physics fails to describe not only the genesis of the laws of nature but also makes it impossible to understand how these laws are being enforced successfully without failure in a massive universe. We will discuss these issues in the present paper. We will see that the current theory of Physics dominated by Einsteinianism is a total failure in understanding the genesis and enforcement of the laws of physics and must therefore be abandoned without delay.

Light Speed Barrier: the greatest impediment in understanding the genesis and enforcement of Laws of Physics.

In nineteenth Century, Newton ruled; most of the twentieth century and onwards has been ruled by Einstein. His special and general theories of relativity and the models of the origin of the universe based on his theories have almost become a religion with physicists. Despite the fact that his light-speed barrier created innumerable problems – mathematical, physical as well as philosophical, and despite the fact that there are mounting evidences against this barrier and despite the fact that the whole branch of Quantum mechanics is regarded non-local, Einsteinianism rules the Physics. Einsteinianism has become a type of physico-religion, which must rule whatever the nature of the evidences. If any facts apparently seem to be violating the Einsteinian limits, ways must be found out so that they conform to them. My earlier article, "Einsteinianism: Time to Abandon this Physico-Religion" examines the problems related

with Einsteinianism and suggests that time has now arrived when this needs to be challenged and confronted. It also presents a formula that can be used for gamma factor instead of the formula Einstein developed based on Lorentz contraction; this will make light-speed stable, not constant. To understand the problem related to genesis and enforcement of laws of physics, I will have to reproduce certain portions from the previous paper.

"Light cannot be allowed to adorn divinity, which turns its small speed into an infinite one for all practical purposes. Light-speed barrier is an artificial barrier erected by Einstein's mind. Physicists have unfortunately turned this barrier into a wall that cannot be scaled. This is despite the accumulating evidences at the microscopic as well as the macroscopic level pointing to the brittle nature of the foundation of this wall. To talk of light-speed as the fastest possible speed is as to talk in the tenth century of the speed of the horse being the fastest achievable speed on the earth. And Einstein cannot be allowed to don the role of Final Prophet whose Word cannot be challenged or changed.

"The current state of the knowledge of universe rests primarily on the two important branches: Classical Mechanics (that includes Newtonian Mechanics, Einstein's theories of relativity and Hubble's cosmology) and Quantum Mechanics. Philosophically, the two often seem to be at loggerheads, though both of them have been of huge practical importance. Despite the challenges posed by the Quantum Mechanics to Einsteinian and other classical ideas, the influence of Einstein remains overpowering in the overall scenario. He remains the unchallenged genius of the modern Physics. … His theories gave a quantum jump to the knowledge of the universe. But there was one principle that he was never ready to part with, the principle of the constancy of light-speed.

" The empirical "constancy" of light-speed observed by scientists led Einstein to declare that light-speed was indeed "constant", meaning it cannot change (at least in vacuum) under any circumstances, and there cannot be any speed beyond the speed of light. The whole foundation of Physics has unfortunately relied too heavily on Einstein's obsession for light. It was this obsessive fascination combined with his brilliance that he was able to influence almost every theory of physics so that it did not violate the barrier of light-speed. It will be explained below how Einstein manufactured his ideas about light-constancy and tried to fit everything into it. In doing so, he consciously or unconsciously tried to turn the minibus of light-speed barrier into an omnibus that would absorb the whole universe.

"Even from an empirical point of view, this is extremely difficult to believe that a small speed like that of light can be of any help in understanding the functioning of the universe. The universe is so vast that in its backdrop, the light-speed is nothing but mere crawl. To keep the universe functioning the way it is functioning, much speedier ways of communication would be needed.

"It is also interesting to note that Einstein's First Postulate says that physical laws in all the co-ordinate systems are the same. This postulate in itself is the cause of contradiction for the postulate of light-speed constancy, as how so vastly distant co-ordinate systems can regularly communicate to know about these laws and keep following them without fail. It can be argued that these laws are the same because they all had their origin in the Big Bang. But soon after the Big Bang they got separated by huge distances, making most of them unable to communicate with one another. Why then do the same laws prevail everywhere in the universe? We know from our daily experiences that the enforcement of law requires a constant vigil in the whole land. What then, makes the matter so obedient all over the universe? This question will also be discussed later in another context. The fact however remains that Einstein's two postulates of special theory of relativity are contradictory to one another.

"The history of modern Physics is witness to how Einstein used his idea of light-speed barrier to bulldoze almost every other theory; how he constructed theories and formulas to adjust almost every mechanism to its demands. One mistake of light-speed barrier led to hundreds of errors being accepted by the community of Physicists. This is another matter that Einstein and the posterity of physicists did so considering that the falsehood of light-speed barrier was the truth that has to be accepted at all costs."

The problems that Einsteinian concepts pose are numerous. The Chief ones are:

Problem of Photon Mass.

In spite of the hullabaloo on the photon mass, the truth remains that a particle is a particle only because it has a size and a mass. Just to make it adjust to the demands of a theory that puts limit on the highest speed, the size and mass of a particle cannot be reduced to zero. If the gamma factor of the special theory holds true, even the size of the photon at the light speed has to be zero, which mathematically means the size of a photon at rest must be infinite. This is because with the increase of velocity, the size contracts leading to a zero size at the light-speed. It is not only the question of mass but

also the question of the size of photon, which needs attention. The wavelength too of photon must become zero, if Einstein's gamma factor holds true. To take shelter in the empirical truth for supporting this is deplorable.

Gravity has to change to adjust to the demands of Gamma

General Theory was surely a clever attempt to turn the supposed universal constant of light speed into an eternal and ubiquitous reality. Despite the presentation of GTR a long time back, that is about 85 years, the theory still remains incomplete and untested.

The Question of locality in Quantum Mechanics

Quantum mechanics owe its existence among others to Einstein. Yet Einstein did not accept it as a complete theory, because it violated his idea of locality emanating from his universal constant of light-speed that puts a limit on any information travelling faster than light. Locality is a powerful concept—In fact, regarded by many as the most powerful--of Physics that denies action at a distance, or what is called as "spooky action at distance". Despite the fact that nonlocality is now regarded as consistent with quantum mechanics, Einstein's influence on physics is such that the fundamental idea of the light-speed barrier has not been dropped. Physicists do not take quantum physics as enough evidence against the theory of special relativity. Einstein was right in believing that instantaneity is something that cannot be acceptable; for it will demolish the very foundations of determinism. If determinism is demolished, causality will have no meaning. The future will then become probabilistic and chaotic rather than deterministic.

Infinities in Einstein's theory a permanent feature

Thus Einstein's gamma compels us to believe that despite the commonly known fact that mass and volume are basic properties of matter, particles can exist, with zero mass or zero volume. Thus as soon as a body gets to the speed of light, its size would become zero. Zero size does not mean it has ceased to exist but only that it exists without any size. And still more interesting is the declaration that the body with zero volume has infinite mass. Thus it also means a certain thing has almost ceased to exist in space-time, and yet has infinite mass, which is detectable in space-time. This formula has led scientists to believe there are many particles that do have zero mass. In fact, in the wake of Einstein's general theory of relativity, the universe has become full of infinities. The world is said to have begun at a Big Bang singularity at which space-time was infinitely curved meaning again it had zero volume and infinite mass. Not only did the universe begin at infinity and could end at singularity according to one section of Physicists, stars too would collapse to form infinities. Thus infinities that philosophically are divine properties have, in the modern theory of physics, become unavoidable in a universe filled with finites. In brief, the world is supposed to have begun with infinities (at both ends that is, at zero volume and infinite mass) and may also end at infinity or a finite universe having innumerable infinities.

We have to build a theoretical structure that does not associate infinities with the objects of the universe. If a body moves, it has to move with other than zero velocity; if a particle has to exist, it must have some mass and some volume, even if it were extremely small. To determine the masses and volume of a certain existing particle may be practically impossible, but, theoretically, it has to have mass and volume, howsoever small. From Einstein's general theory of relativity, it can be inferred that mass and volume are not fundamental properties of the matter. Thus even infinite masses can occur at Big Bang and black hole singularities without volumes. Is it not surprising that, at the singularities, the matter has been destroyed in terms of its volume, but is very much in existence as far as its mass is concerned? This half death of the matter is one of the most audacious and repugnant results of the general theory of relativity, which has not been convincingly answered by other theories as well.

Problem related to Origin of the Universe

The models of the origin of the universe that have been proposed time and again by various physicists too were influenced by Einstein's ideas so much that despite huge problems in the development of these models, the basic principle of the light-speed barrier was not given up. This is another matter that some physicists have tried to explain the problems by proposing that, in the initial phase of inflationary expansion, which lasted a very small fragment of a second, the light speed was faster than its speed today on the account of the extraordinary energy available then.

It was Einstein's theory of General Relativity (along with Hubble's idea of the expanding universe), which has chiefly been responsible for the belief that the universe began from a singularity of infinite mass and energy density, and almost zero volume. It was mainly his ideas and his equations that compelled physicists to think of the universe beginning at a point where all the present laws break down. It is ironical to believe that present laws were derived from a situation where these laws had no tangible or perceptible existence. Despite many attempts to

answer it, the question still remains unconvincingly answered. The universe began at singularity with a huge explosion called Big Bang. This huge explosion was not an explosion we understand in our routine life. This was not an explosion in space but of it. The size of the universe at 10-12 seconds was as small as 10-17 metres. At the instant of singularity, the size was 10-33 centimetre. The initial universe was compressed into a state of extremely high density estimated to be about 1090 kg/cc (kilograms per cubic centimetre) and extraordinary temperatures, perhaps in excess of 1032 °K. Obviously, both of these were without any counterpart in the presently observed Universe. And thanks to the results of the mathematical puzzles based on the Einstein's and other equations huge transformations in the universe occurred within the first second, when the universe had already expanded to a diameter of about 1 to 10 light years., its density had decreased to 1010kg/cc, and the temperature had dropped to 1010 K. What brought these huge changes so quickly still remains largely poorly understood. The problem of Horizon Paradox still haunts the scientists because it is extremely difficult to fathom how the portions of the universe that could not have communicated on account of the limit on the speed of communication can possess similar properties, have the same temperature and look the same.

Despite its successes, the Standard Model has plenty of known problems. In the June 2003 issue of Scientific American, in an article, captioned, "The Dawn of Physics beyond the Standard Model," Gordon Kane has listed ten theoretical problems:

1. It (the standard model) implies a tremendous concentration of energy, even in the emptiest regions of space. This so-called vacuum energy would have either quickly curled up the universe long ago or expanded it to a much greater size.

2. The expansion of the universe is accelerating, and this cannot be explained by the standard model.

3. There is reason to believe that in the first fraction of a second of the Big Bang, the universe went through a period of extremely rapid expansion called inflation. The fields responsible for inflation cannot be those of the Standard Model.

4. If the universe began as a huge burst of energy, it should have evolved into equal parts of matter and anti-matter. This did not happen. The universe is matter. The Standard Model cannot explain this.

5. About a quarter of the universe is invisible cold dark matter that cannot be particles of the Standard Model.

6. In the Standard Model, interactions with the Higgs field cause particles to have mass. The Standard Model cannot explain the form these interactions must take.

7. Quantum corrections apparently make the Higgs boson mass huge, which would make all particle masses huge, which is obviously not the case.

8. The Standard Model cannot include gravity, because it does not have the same structure as the other three forces.

9. The values of the masses of particles cannot be explained by the Standard Model.

10. There are 3 generations of particles. The Standard Model cannot explain why there is more than 1 generation."

Quasars

Quasars have become controversial on account of the extraordinary redshift they show. The present day understanding of the quasars shows that (I) they are not necessarily star-like and have complex structures, (2) though many of them are radio sources, all of them are not, and (3) the high red-shift is the continuing hallmark of the quasars. Till now, the highest red-shift available is 3.78. On the basis of the understanding of the Doppler shift, any red-shift over that of 1.00 means a faster than light-speed velocity of the source, A value of 2.00 would mean a relative speed of double the light speed. This would clearly mean that they are moving at much higher speeds than the light. But again, Einstein's ghost scared the cosmologists who started finding out alternative explanations for this high redshift. Obviously, these attempts have not been convincing. These have led to still bigger complications. The controversy is summed up in "The Universe of Motion" by Dewey B. Larson. He says:

" While the high redshift problem was circumvented in conventional astronomical thought by this sleight-of-hand performance with the relativity mathematics, the accompanying distance-energy problem has been more recalcitrant, and has resisted all attempts to resolve it, or to evade it. Reference was made to this problem in… …….If the quasars are at cosmological distances—that is, the distances corresponding to the redshifts on the assumption that they are ordinary recession redshifts—then the amount of energy that they are emitting is far too great to be explained by any known energy generation process, or even any plausible speculative process. On the other hand, if the energies are reduced to credible levels by assuming that the quasars are less distant, then conventional science has no explanation for the large redshifts……..Obviously something has to give. One or the other of these two limiting assumptions has to be abandoned. Either there are hitherto undiscovered processes that generate vastly more energy than any process now known, or there are hitherto unknown

factors that increase the quasar redshifts far beyond the normal recession values."

Structural Level Problems

There are many problems at the structural level also, which the standard model of the origin of the universe cannot fully explain. The universe is made up of billion of galaxies, some of which are smaller and some greater than ours. However, what amazes cosmologists is that most of the universe is devoid of any luminous matter, and is formed of gigantic empty spaces. It is hard to find how these gigantic voids were formed and whether these voids are empty. One thought is that the universe may contain just one gigantic void in which large superclusters and clusters are floating. The other possibility is that superclusters form one gigantic chain within one gigantic void so that it is possible to traverse through one chain to the other. The third possibility is that galaxies cluster to form sheets separating vast regions of empty space just as soap filaments and bubbles formed out of them. These structural features are also not easily explainable by the Big Bang models. If the universe started from a highly dense singularity, what caused these voids to appear? At the same time there are structures like Great Wall, which is a gigantic structure of up to at least 100-200 Mpc scales. The truth is that these structures and more generally the formation of galaxies have been puzzling scientists, because it is difficult to imagine these on the basis of the Big Bang models.

Quantum Mechanics

Quantum Mechanics led to huge debates, as it challenged many of the previously held philosophical views. Uncertainty principle was presented as representative of the objective uncertainty of nature. It was advocated that one cannot know the truth of nature, as uncertainty is inherent in nature. This and the wave-function-collapse, the formulation of Bell's inequalities and subsequent evidences that they are violated caused an enormous controversy over determinism. It was argued that Quantum Mechanics proved the indeterministic nature of nature, a position that was aggressively opposed by a number of scientists, led by Einstein. He once wrote to Born,

"The quantum theory provokes in me quite similar sensations as in you. One ought really to be ashamed of the successes, as they are obtained with the help of the Jesuitic rule: 'One hand must not know what the other does.'"

It is clear from the above sentence that Einstein used to be ashamed of the successes of any theories that did not satisfy his positions, which were mostly the outcome of his light-speed barrier.

i. The great debate reached a flash point in Copenhagen Interoperation with Bohr being its chief architect.

In the Copenhagen Interpretation, it can be argued that Quantum Mechanics is considered completely separate. Copenhagen Interoperation was in fact a work of the ideology of Bohr, who went on to say:

" 'There is no quantum world. There is only abstract quantum physical description. It is wrong to think that the task of physics is to find out how nature is. Physics concerns what we can say about nature.'

Einstein was disillusioned with Quantum Mechanics, as he did not like the idea of abandoning the Locality, Causality and Determinism. He also tried to support his ideas through an experiment, called EPR Paradox. But the idea of locality was constantly troubling the quantum physics. Bell's theorem, published in 1964, braved a very strong challenge to the locality. Bell proved that the idea of locality was not compatible with the Quantum Mechanics, as there seems to be a faster than light influence on very distant events.

Locality is a constant thorn in the flesh of QM, and many believe the two are not compatible with each other. Rowbottom says:

" The choice to abandon locality, which I indeed support, is based upon 'weighing up' the relative advantages of each macroscopic prejudice, respectively, and reaching the conclusion that locality will require the least intuitive effort to sacrifice. Non-locality is also the most appealing choice because of the work which has already been done in this direction, by de Broglie-Bohm."

There cannot be a more preposterous logic than that the Quantum Mechanics demonstrates a detachment between the microscopic and the macroscopic worlds. The crossroads where the present physics seems to be stuck at the moment leaves an unmistakable impression that the two are separate indeed. If the Quantum Mechanics were accepted as different from the macroscopic world, it would only mean that our world has two faces; the outer and greater picture is entirely different from the inner and smaller picture. This is like saying that a living being is totally different from its cells. The problems we face today in reconciling the two is basically the result of the philosophically unfounded principle of locality, which has outlived its utility as a genuine limiting principle in the physical world. Furthermore, the set of laws in the larger world cannot be different from the set of laws governing the inside of its constituents. This is another matter that the significance of different laws assumes different proportions at different levels. The genes functioning within the cells have no parallel in the macroscopic

world. But this does not make cells a different world from the world of living beings. Bohm's endeavours to bring in the two closer, is admirable, but he has not succeeded in presenting a plausible ground for his ideas of Quantum Potential and Implicate Order. What brings this Implicate Order into action?

Enforcement of Laws: How?

What are laws? Aronson, Harré, and Way (1994) say:

" Laws are invariant relations between properties. We have argued that judgements of verisimilitude are based on similarity comparisons between the type of object referred to by a scientist and the actual type of the corresponding object in nature. The relative verisimilitude of laws can be thought of in the same way, namely as the degree to which the relationships between properties depicted in relevant theories resemble the actual relationships between properties in nature"

Max Born (1949) stated three assumptions that dominated physics until the twentieth century:

1. "Causality postulates that there are laws by which the occurrence of an entity B of a certain class depends on the occurrence of an entity A of another class, where the word entity means any physical object, phenomenon, situation, or event. A is called the cause, B the effect."
2. "Antecedence postulates that the cause must be prior to, or at least simultaneous with, the effect."
3. "Contiguity postulates that cause and effect must be in spatial contact or connected by a chain of intermediate things in contact."

By putting a bar on the speed of information or influence, which is a very slow speed in the backdrop of a huge universe, Einstein's theories have not strengthened but weakened causality and determinism. What we see as its result is that, soon after the Big Bang, the portions of the universe start distancing from one another, not only in terms of their physical positions nut also on terms of their ability to influence one another. Soon, most of the components of the universe get so far from one another that it requires not minutes, hours, days or weeks but years for them to communicate with one another. There are huge regions, which require not tens or hundreds but thousands, even millions and billions of years to know about their well being. Effectively, it can be said that if light-barrier is real, the universe's collective existence has no meaning at all; for objects only lying in close vicinity are physically capable of influencing one another, positively or negatively. The universe's status then becomes of the ancient human society when men and women belonging only to their village or tribe were in position to interact. The universe at a collective level will then emerge as a very backward organisation, where there is hardly any communication between various regions. This is an awkwardly unceremonious proposition to believe; for the universe then cannot even be called an organisation, as every organisation needs a regular communication between at least most of its members. If the news of the death of a star takes millions of years to reach the other stars that cannot even shed a few tears on the death of their fellows, the life of the universe loses the very foundation of collective existence. This makes Einstein's position ludicrous. On the one hand, he has an unshakeable faith in Determinism and is not ready to accept any theory as a complete theory if it violates it. On the other hand, he makes determinism lame by making it unable to move with a significant speed. As a natural corollary to that the principle of cause and effect lose its raison d'être. Theoretically, we can claim that one event is the cause of another event that preceded it. But practically, we delay the effect by drastically curtailing its velocity. The information or force or influence of any kind from the causing effect will only crawl at the speed of light before it reaches its destination changing it the way it wanted to, or the way the affected object wanted to be changed a long time back. What meaning would then causality have? The picture that emerges is of a universe in which a present event may have been determined a long time back in the path of its history, but hardly by events that lie outside the path of its history. In totality it can be said that the present state of the portions of the universe is only the effect of a tubular past leading to the Big Bang, and it has hardly any effect of what has been happening in the rest part of the history of the universe. There is no time for others to take care of one another, or even say "hello," as this hello will take so much time that it would hardly reach the one for whom it was intended. The world thus becomes totally disorganised and individualistic; it is reduced to a mere container of selfish individuals with no desire or ability to communicate with one another. But is this the real universe, we know? The universe that stares us is far from that disorganised state of affairs. It seems to be well-organised and well-knit unit. Its constituent parts seem to be constantly in touch with one another. They do not appear to be unconscious of one another's presence; they seem to form a universe that seems to be in a perfect state of harmony, a harmony that cannot be there without mutual trust and knowledge of one another's' limitations and capabilities.

Determinism in Physics has very well established roots. This is one of the major principles

of Classical as well as Relativity physics, and is sometimes referred to as one of the classical "prejudices" along with causality and locality. In QM, probabilistic outcomes play a major role, and future events cannot be predicted precisely. However, Bohemian Quantum Mechanics has clearly established that, if locality can be abandoned, QM can become deterministic in nature. Even otherwise, probability should not be viewed as the opposite of determinism. If a certain outcome is more probable than others, it indicates a certain amount of certainty. The outcome is not wholly, at random. If it can be predicted that the probability of finding an electron at a certain place is greater than at other places, it clearly shows a preference. If a formula can be derived to indicate this preference, this must obviously have a reason. If we know the reason, we can become more certain.

In the currently accepted version of Physics, causality the way it is understood has become geriatric. The ultimate cause was the Big Bang event, when the laws were already formed that will determine every single event in the future universe. The laws that hold today are the same laws without any change whatsoever. Despite such an old age, how they are surviving is not known. What causes them to maintain their sublimeness? Why does a law like the second law of thermodynamics not affect the life of the laws themselves? When everything else degenerates or gets recycled or undergoes evolution, why not the laws? If it is these laws that lead to the evolution and then degeneration and/or recycling within the universe, why do they not degenerate themselves? How come they did not undergo a phase of evolution themselves instead of appearing within an extremely minute fraction of the first second? Who made them, and who sustains them?

If we look at the human beings and the systems that they have created over the ages, we can easily conclude that laws cannot come into force from nowhere. There has to be a mechanism of the genesis of laws; and there has to be a mechanism of its implementation and continued enforcement. The laws that govern human societies are either made by a King, with or without the consultation of his team of experts, or are made by a body consisting of the representatives of the people and/or experts in laws and other branches of human life. The laws meant for the governance of human behaviour, as individuals and as society, have been evolving from time to time, in content, scope and extent. These laws almost always are enacted for a purpose, which serves either the interests of the all or the majority of the people or more often the interests of the rulers, indirect or direct, of a country or society.

If we have exactly the same set of laws in America and India, there are only two possibilities: Either there has been a communication between the lawmakers of the two countries, or they have both taken the help of the same sources.

Research conducted by an international team of astronomers shows that one of the most important numbers in physics theory, the proton-electron mass ratio, is almost exactly the same in a galaxy 6 billion light years away as it is in Earth's laboratories, approximately 1836.15.

According to Michael Murphy, Swinburne astrophysicist and lead author of the study, it is an important finding, as many scientists debate whether the laws of nature may change at different times and in different places in the Universe. "We have been able to show that the laws of physics are the same in this galaxy half way across the visible Universe as they are here on Earth," he said.

The astronomers determined this by effectively looking back in time at a distant quasar, labeled B0218+367. The quasar's light, which took 7.5 billion years to reach us, was partially absorbed by ammonia gas in an intervening galaxy. Not only is ammonia useful in most bathroom cleaning products, it is also an ideal molecule to test our understanding of physics in the distant Universe. Spectroscopic observations of the ammonia molecule were performed with the Effelsberg 100m radio telescope at 2 cm wavelength (red-shifted from the original wavelength of 1.3 cm). The wavelengths at which ammonia absorbs radio energy from the quasar are sensitive to this special nuclear physics number, the proton-electron mass ratio.

"By comparing the ammonia absorption with that of other molecules, we were able to determine the value of the proton-electron mass ratio in this galaxy, and confirm that it is the same as it is on Earth," says Christian Henkel from the Max Planck Institute for Radio Astronomy in Bonn, Germany, an expert for molecular spectroscopy and co-author of the study.

The bigger Picture

It is clear that the light-speed barrier is too big a hurdle for the development of physics and must be abandoned as soon as possible. Abandoning of that barrier is a necessary requirement for understanding Quantum Mechanics. It is also a must to understand how a vast universe like this can is functioning with harmony, and how a system of laws is in operation all over the universe. Furthermore, there seems to be no plausible philosophical ground that can explain that barrier. Light cannot be allowed to adorn divinity, which turns its small speed into an infinite one for all practical purposes. Light-speed barrier is an artificial barrier erected by Einstein's mind. Physicists have

unfortunately turned this barrier into a wall that cannot be scaled. This is despite the accumulating evidences at the microscopic as well as the macroscopic level pointing to the brittle nature of the foundation of this wall. To talk of light-speed as the fastest possible speed is as to talk in the tenth century of the speed of the horse being the fastest achievable speed on the earth.

Laws of Physics pose huge problems – both regarding their genesis and their enforcement. The current theory fails to explain the both. Neither has it had any time for the creation or evolution of laws nor any mechanism for their enforcement. A system without any effective means of communication cannot sustain itself as a system. It will lead to a total chaos, followed by total disaster. It cannot maintain its existence for any appreciable period of time. Enforcement of laws is a must if the universe has to continue to run in a harmonious way. But how the laws are being enforced in the universe is a question that must baffle all the scientists. And if Einstein's light speed barrier is a clear hurdle in understanding the enforcement, this barrier should be dismissed without any further delay.

Refernces (Papers and Books consulted)

1. Consciousness, Causality, and Quantum Physics David Pratt, Journal of Scientific Exploration, 11:1, pp. 69-78,
2. Processes and Causality John F. Sowa
3. The Copenhagen Interpretation of Quantum Mechanics by Ben Best
4. A Brief History of Time SW Hawking
5. Afterglow of Creation, Marcus Chown Published 1996, by University Science Books
6. Ancient Light, Alan Lightman ,Published 1991, by Harvard University Press
7. Before the Beginning by Martin Rees
8. Black Holes - The End of the Universe? John Taylor, Published 1973, by Souvenir Press Ltd.
9. Black Holes and Quasars and other Mysteries, Stan Joinler
10. Dreams of a Final Theory, Stephen Weinberg
11. Einstein's Greatest Blunder , Donald Goldsmith, Published 1995, by Harvard University Press
12. Relativity, Thermodynamics and Cosmology, Tolman
13. The Accidental Universe, PCW Davis, Published 1982, by Cambridge University Press
14. The Cosmic Blueprint, Paul Davies, Published 1987, by Heinemann Books Ltd.
15. The Exploding Universe, Nigel Henbest, Published 1979, by Marshall Caverdish Books Ltd.
16. The First Three Minutes, Stephen Weinberg, Published 1977, by Andre Deutsch Ltd.
17. The Last Three Minutes, Paul Davies, Published 1994, by The Guernsey Press Company
18. The Nature of Space and Time, S Hawking and R Penrose, Published 1996, by Princeton University Press.
19. The Runaway Universe, Paul Davies, Published 1978, by Biddles Ltd.
20. A Realist Philosophy of Science, Jerrold L. Aronson, (1984), St. Martin's Press, New York.
21. Natural Philosophy of Cause and Chance, Max Born (1949), Dover Publications, New York.
22. "Zur Elektrodynamik bewegter Körper," by Albert Einstein (1905) translated as "On the electrodynamics of moving bodies," in A. Einstein, H. A. Lorentz, H. Weyl, & H. Minkowski, The Principle of Relativity, Dover Publications, New York.
23. "Causation and nonmonotonic temporal reasoning," Peter Grünwald, (1997) in G. Brewka et al., KI-97:
24. "Causation," Kim, Jaegwon (1995) in R. Audi, ed., The Cambridge Dictionary of Philosophy, Cambridge University Press, Cambridge. Second edition, 1999, pp. 125-127.
25. Morphology of galaxies: An overview by R. Buta, Department of Physics & Astronomy, University of Alabama, USA26.
26. "A relation between distance and radial velocity among extra-galactic nebulae" by E Hubble, 1929. Proceedings of the National Academy of Science, 15:168-173.

* The author is a thinker, and is author of more than a dozen books including, "Rediscovering the Universe", "The Devil of Economic Fundamentalism" and "Beyond Einsteinian Limits". He is Executive Chairman, PEACE, 10, Bhagwati Colony, Saharanpur, UP, India
Phones: 91-132-2680440, 91-9760776753

9/6/2010