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Review paper

The Universal Scientific Axiom

The 1st Newtonian Law as an Unbreakable Interdisciplinary Principle

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KEYWORDS

universal scientific axiom

Newton

energy preservation

ABSTRACT

Since 1687, Newton declared that energy can be neither created not vanished. Until today this fundamental scientific principle has never been doubted. Furthermore, it applies to every scientific field, no matter whether it is theoretical or practical. In this paper, the first Newtonian Law of classical mechanics is suggested as the Universal Scientific Axiom applying in every scientific field in multiple differentiated ways.

1. Newton's Preservation of Energy Law as a Scientific Groundwork

With no doubt, Newton's Laws on the preservation of energy (Newton, 1687, Feinberg & Goldhaber, 1963, Haugan, 1979, Mach, 1894, Hill, 2025, etc.) have never ceased to be a solid ground for natural sciences. Although more fundamental theories, such as quantum mechanics and the theory of relativity, have been developed mainly originating by its limitations, they can also be considered as adaptations on Newton's classical mechanics. Moreover, modern scientists expand Newton's 1st Law while adapting it in new scientific fields (Yuhua, 2014). Until today, as science evolves, numerous notable physics theories have been developed, many of which investigating the classical mechanics' limitations and/or adaptations; yet, no theory has ever doubted the fundamental Newtonian preservation of energy Law. Energy can be neither done nor undone. Until today, no matter how many theories have been developed, the Preservation of Energy Law remains unbreakable.

Although important limitations/adaptations have been set to Newton's classical mechanics until today, mainly through the theory of Relativity and Quantum mechanics (Muller-Kirsten, 2024), none of these adaptations/limitations has ever doubted the fundamental Newtonian axiom of energy maintenance; a principle probably indicating providence rather than randomness (Basil, 2014).

Thus, classical mechanics may have to be specifically adapted, but the main Newtonian principle remains infrangible; energy can be transformed, dispersed, diffused, or transferred, but it can be neither created, nor vanished.

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2. The Newtonian Axiom in Psychology and Psychoanalytic Theory

As Newton has noted since 1687 (Newton, 1687), energy can be transformed, diffused, or transferred; but it can be neither created, nor vanished. The same principle applies in modern Psychology, firstly described in detail by Freud's Psychoanalytic theory (Peters, 1956). As Freud has extensively described in his psychoanalytic theory in the beginning of the 20nth century, every defense mechanism is a way of the self to manage the energy deriving from internal conflicts. According to Freud, the self/personality is a constant battle between innate impulses – "id" on the one hand and "hyperego" – social imperatives on the other. Through this constant battle, a lot of energy arises; all this energy has to be settled down in order for the self to maintain his/her stability.

As energy cannot be vanished or created, but rather scattered, distributed, transformed, etc, Freud describes numerous ways in which this (inner) energy can be managed. "Denial", "Projection", "Distortion", "Repression", "Isolation", "Displacement", "Splitting" and "Dissociation" are only some of the tens of defense mechanisms through which Freud analyses how the self/anybody deals with his/her inner energy. This energy can be transformed into a piece of art, humor, or psychosis, mostly depending on the defense mechanisms used (Baumeister, Dale & Sommer, 1998), as well as the amount of energy to deal with; but what cannot be done is vanishing or creating this inner energy. Plus, according to Freud, this is the role of the psychotherapist; to intervene as an expert who can facilitate this management for the patient (Freud, 1905). Rogers' humanistic approach is quite close, since he recommends that the psychologist is the therapist who leads a person to manage and transform his inner energy through empathy and unconditional acceptance (Rogers, 1995).

According to Aristotle «Anybody can get angry; it's very easy. But it is extremely difficult to get mad with the right person, up to the right extent, for the right reason, in the right time» (Aristotle, 2021, 385-322 BC). This, perhaps as an early general description of inner and outer energy management, leads us to the Systematic Approach to Psychology where inter-human energy is presented in a more direct and clear way (Shelechov & al 2017). In Systemic Psychology every person is defined as a part of a system (Lomov, 1975); this means that energy interaction through human actions is even more obvious. Perhaps Freud's psychoanalytic approach could be parallelized as quantum mechanics, while the Systemic Psychological approach as classical mechanics. This energy, in a state of mood, feeling, positive or negative opinion, etc, can be transferred from one another, while also transformed through the differentiated filters of everyone's ego; but it is neither vanished, nor created.

Last but not least, behaviorism describes the way in which an interaction between any living organism and their environment takes place (Moore, 2011). Every psychological approach describes the way in which energy is transformed or transferred, but no psychological approach has ever assumed that energy can be either vanished or created. The Newtonian Preservation of Energy Axiom remains intact in Psychology.

3. The Unique Scientific Law in Social Sciences and Science in General

Besides than Psychology, Newton's First Law also applies in every social science as an undoubtable Unique Scientific Law. In Sociology, Criminology, Law, Management, Marketing and Economics, scientists study the way in which a memory, habit, trend, mood, or forecast may result in a predicted outcome combined with other factors; but there is no doubt that no energy can be created or vanished. The scientific object is different in each case; a builder uses building materials, a criminologist may investigate motives, patterns, D.N.A., etc., an economist may study trends, influential factors, figures, tables, etc., a politician has always to deal with different, often opposite forces, but none of the above questions that all these factors can only be transformed or transferred; they can be neither created nor eliminated.

With no doubt, quantum mechanics, as well as natural sciences are difficult to understand, especially for people with no expertise. Yet, this does not change the fact that the universality of Newton's basic assumption that energy is neither created nor vanished needs to be examined. There is no evidence until now that energy can be created or eliminated. Even the most unspecified particle in quantum mechanics until now, the Higgs Hobon (The ATLAS Collaboration, 2022) cannot be created or vanished out of nothing. Its study focuses in a great extent on the conditions of its appearance and decay, no matter how these conditions are difficult to determine; but, whilst its rare characteristics, it is neither created, nor vanished.

Finally, reductio ad absurdum is a well-known, well-established mathematical method (Goodstein, 1948). We often choose the only right answer, just because we know that the opposite one couldn't stand. This also comes in agreement with the well-known epistemological principle called Occam's Razor claiming that we are allowed to assume that an entity exists only if we are obliged to do so (Braithwaite, 2007). This is the case of the Universal Scientific Axiom that energy can be neither created or vanished; we are actually obliged to assume its universality since there is no evidence at all for the opposite.

4. Conclusion

Whether the first Newton's law can be noted as the Kikrilian Universal Scientific Axiom needs to be examined, at least until it can be rejected. Until then, it leads to some critical assumptions:

1) Since Energy can be neither vanished, nor created, this means we are rather managers of what already exists. This indicates God's providence, directly referring to the Orthodox Theological assumption of Saint Basil of Kaisaria (Basil, 2014).
2) The basic form of equation is probably applicable in every scientific domain. Since energy cannot be vanished or created, every transformation of it must lead to the same amount of it.
3) Psychology, as well as every human science, depends on the same scientific ground as every natural science. Behaviorism is no more the only standard basis for a trustful Psychology in the standards of natural sciences (Skinner, 2011). The fundamental axiom of preservation of energy is the common solid ground for every science, not excluding Psychology and especially Psychoanalysis.

Further research can prove that, no matter how, what already exists remains.
Unless this can be contradicted, this theory remains intact.

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