Int.J.Curr.Res.Aca.Rev.2022; 10(12): 12-13

EXCELLENT PUBLISHERS

International Journal of Current Research and Academic Review

ISSN: 2347-3215 (Online) Volume 10 Number 12 (December-2022)

Journal homepage: http://www.ijcrar.com

doi: https://doi.org/10.20546/ijcrar.2022.1012.002

A Zoo of Universal Laws-A Brief Note

Monendra Grover*

Centre for Agricultural Bioinformatics, ICAR-Indian Agricultural Statistics Research Instituite, Pusa, New Delhi - 110012, India

**Corresponding author*

Abstract

This short review clarified the philosophers that universal laws are described by physics, with the special sciences such as biology, psychology, sociology, economics and medicine having non-universal laws. However, research has revealed interesting results at small scales, and in recent times physicists have been exploring if the second law can still be applied to systems with a limited number of particles. This review proposed that aesthetics can be key to understanding the universe. This sits well with the notion there exist no universal laws; rather, they might be a set of aesthetically pleasing patterns, much like art.

Article Info

Received: 05 November 2022
Accepted: 14 December 2022
Available Online: 20 December 2022

Keywords

Biology, Psychology, Sociology, Economics, Medicine, Universal Laws.

Introduction

It is widely accepted among philosophers that universal laws are described by physics, with the special sciences such as biology, psychology, sociology, economics and medicine having non-universal laws. This notion has also been explored by biologist and philosopher Rupert Sheldrake, who supposes that these laws may fluctuate over time. Brandão *et al.*, (2015) report brings up a new concept in relation to this proposition; at quantum levels there could be multiple second laws of thermodynamics which aren't visible on macroscopic scales.

This is in contrast to the notion of variability when seen in terms of 'over time', as suggested by Sheldrake while this report mentions variability at a given point of time. The report demonstrates that at very small levels it's indeed plausible for there to be multiple second laws of thermodynamics - behaviour which can often be counterintuitive.

The second law of thermodynamics suggests that the universe is continuously becoming more disordered. However, research has revealed interesting results at small scales, and in recent times physicists have been exploring if the second law can still be applied to systems with a limited number of particles.

It appears that it does hold true for such small scales but with additional laws in effect reducing the rate of disorder. There are varied kinds of disorder in these systems, and even counter intuitive behaviour such as violation of the traditional second law can arise due to interaction between these multiple laws. The implications of this knowledge could be far-reaching, affecting nanotechnology, quantum computation and bioengineering greatly.

Quantum mechanics is often used to explain the behavior of matter at extraordinarily small scales, such as atoms, molecules, and elementary particles. However, macroscopic quantum phenomenon has also been explored; such as superfluidity, superconductivity and quantum hall effect. Much experimentation involving quantum gases - like Bose-Einstein condensates - has taken place in this area.

Macroscopic quantum phenomena can be observed in laser light too and some have even theorized that bit the universe itself is a massive quantum computer! The size of these systems can vary greatly but they all share the same characteristic - macroscopic quantum behavior. Therefore, it stands to reason that laws - including those of physics - may also fluctuate on a grand scale.

The reason why these variations of the universal laws have been observed very rarely may be because most of the constituents of the system observe universal laws, while the variations are observed in a small number. More of these variations may be discovered as technology advances.

We proposed that aesthetics can be key to understanding the universe. This sits well with the notion there exist no universal laws; rather, they might be a set of aesthetically pleasing patterns, much like art. We posit consciousness is "all that is" and description of consciousness (also known as the "fundamental law of the universe") simplifies it by reducing its dimensions. Despite this, we should still strive to comprehend it - likely, consciousness (or the "fundamental law of the universe") cannot be confined to a few mathematical equations. In this way, consciousness (or the "fundamental law of the universe") resembles biological systems more than man-made mechanisms.

References

Fernando Brandão, Michał Horodecki, Nelly Ng, Jonathan Oppenheim, Stephanie Wehner. The second laws of quantum thermodynamics.*Proceedings of the National Academy of Sciences*, 2015; 201411728 DOI: 10.1073/pnas.1411728112

Monendra Grover, Dwijesh Mishra Rajesh Kumar A. K. Trivedi and Sudhir Srivastava (2014) Computation, Mathematics or Aesthetic Realism: Revisiting the foundations of modern biology and agriculture, Int J Curr Res Aca Rev, 2:175-177

How to cite this article:

Monendra Grover. 2022. A Zoo of Universal Laws-A Brief Note. *Int.J.Curr.Res.Aca.Rev.* 10(12), 12-13.
doi: https://doi.org/10.20546/ijcrar.2022.1012.002