# Einsteinian science: A success analysis of two new scientific discoveries

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Abstract A new science with new discoveries has the potential to change the outlook of many fields. Otherwise, scientists are at risk of lingering on past discoveries and approaches. Recently, we discovered two new laws of nature in Einsteinian science: the success/failure system and cosmic inertia. We had hoped for them to be disseminated by an editor of a respectable Science Citation Indexed journal and we are still waiting. Our motivation is that only Einsteinian science with the success/failure system and cosmic inertia will provide a true picture of the universe. Before finalising the relevant fourteen papers for dissemination, we aim to perform a success analysis of the two scientific discoveries. We encourage the scientific community to embrace Einsteinian science immediately. The contrast between Newtonian science and Einsteinian science does not lie in merely the distinction between the two theories of the macrocosmos, Newton's theory of gravitation and Einstein's general relativity.

**Keywords** Cosmic inertia, Einsteinian science, Law of nature, Nature, Newtonian science, The success/failure system

# 1 Introduction

Einsteinian science<sup>1,2</sup> refers to Einstein's later achievements in principle theory and the cosmos rather than focusing on special and general relativity. Recently, we wrote fourteen high-quality papers<sup>3-16</sup> about concepts within Einsteinian science and the discovery of two new laws of nature. Based on an erring universe, the success/failure system<sup>3-9</sup> reveals the mesocosmic structure of the universe. By experiencing the universe as an oscillating universe (i.e. an endlessly expanding and contracting universe), we discovered cosmic inertia.<sup>10-16</sup> Across our fourteen papers, we made sure to align our discussions consistently with Einstein's views on scientific consciousness.<sup>1,2</sup>

These fourteen papers<sup>3-16</sup> demonstrate our progressive learning of **Einsteinian** science and provide a sober reflection on **nature** and the sciences. We ultimately conclude that (1) current scientific practices concerning a theory of the universe, such as quantum gravity, string theory, and others, are stagnating, and (2) only Einsteinian science with the success/failure system and cosmic inertia can provide a **true picture** of the universe.<sup>1-16</sup> With our ground-breaking work, one could expect some sensational transformations once the fourteen papers have been published. Unfortunately, the papers remain in the e-print archive viXra without attention.

We are aware that our work involves some **paradoxes.** First, the scientific community is blind to principle theory and the cosmos in Einsteinian science, a great scientist's science. Second, Einstein's scientific problems of the mesocosmos and the universe as a whole were eventually solved by us, not by him. Third, any free individual with an active scientific mentality can probably discover the success/failure system and cosmic inertia from a chair in the corner of their living room. All of these are almost too absurd!

After writing the fourteen papers, it took another half a year to determine whether an additional paper was needed. The answer is no – we have completed the study on Einsteinian science, and we succeeded, as shown later in this paper. What remains is for a responsible editor to disseminate and encourage Einsteinian science in their journal. Nevertheless, we now provide a summary across the fourteen pieces to support a holistic and integrated understanding of our findings.

We are inspired by Einstein's saying, "Success [of the creation itself] alone is the determining factor [of a principle theory]."<sup>2:292</sup> Thus, we focus on a **success analysis** of the success/failure system and cosmic inertia. The success analysis focuses on how we overcame intellectual obstacles to achieve **discoveries**, learned correctly and progressively about **Einsteinian science**, and grasped a deeper understanding of **nature** and the **sciences**. We suggest examining the earlier irreplaceable fourteen papers<sup>3-16</sup> after studying this paper.

# 2 The success/failure system

In "The success/failure system hypothesis," we began our work on Einsteinian science with some biologists' and physicists' interest in universal biological laws, such as Bohr,<sup>17</sup> Einstein,<sup>1,2</sup> Feynman,<sup>18</sup> Mayr,<sup>17</sup> and Schrödinger.<sup>19</sup> Indeed, only Einstein<sup>1,2</sup> had a method called principle theory to address the laws of nature on the scale of the universe, in the mesocosmos in this case. Thus, we applied Einstein's principle theory to the success/failure system hypothesis.

Based on Einstein's concept of **the aim of science**, <sup>1-3</sup> we quickly identified **a system view** of the law of nature at this mesocosmic level and used **symmetry** to define **a general fact**: <sup>3</sup> if something (the whole) depends on another thing (a part) for its conditions for success, then it depends on that thing for its causes of failure, and vice versa.

On the basis that **the general fact** is indeed true, we were guided by Einstein's principle theory to follow up with discrete mathematical reasoning and derive **the success/failure system**, notated by **PO** conditions for success = **PO** causes of failure, indicating the same partial ordering (PO) for two distinct relations in a success/failure system.<sup>3</sup>

Our next paper was "The cosmos with the success/failure system." It may surprise the reader (and even ourselves now) that we then quickly switched from biology to physics. However, the cosmos with the success/failure system eventually led to the discovery of cosmic inertia, 10-16 which we would have missed had we remained focused on biology.

First, we used the success/failure system, an application of principle theory, to learn general principle theory and to serve as a theoretical framework for explaining the historical practice and divisions of biology.<sup>4</sup>

Second, we considered the cosmos, but with respect to current scientific theories of the universe, such as the standard model and string theory.<sup>20-22</sup> Based on the **inevitability** of applying **the anthropic principle** (which allows our universe to form life) in **the multiverse** in string theory,<sup>20</sup> we proposed that a final theory of our universe may not be merely **a duo** of quantum mechanics and general theory, but **a triad** of quantum mechanics, general relativity, and the success/failure system, as life already exists in our universe.<sup>4</sup> This was the confrontation against current scientific practices to promote an integration with Einsteinian science.

In "The logic of the success/failure system,"<sup>5</sup> we returned to the as-yet untested discovery of the success/failure system. Specifically, we previously assumed that the general fact was true without any empirical assurance.<sup>3</sup>

We depicted the logical analysis of the success/failure system using Einstein's **principle theory**<sup>1,2</sup> and applied Russell's **analytic philosophy**<sup>23-26</sup> to examine the logical structure of the mesocosmos critically. In this way, we used the success/failure system to learn general principle theory again and to obtain a deeper understanding of Einsteinian science.

Logical analysis using Einstein's **principle theory**<sup>1,2</sup> included the concepts of comprehensibility, the antithesis between empiricism and rationalism, mathematics, and a single theory of the universe. The critical examination using Russell's **analytic philosophy**<sup>23-26</sup> included the concepts of structure, general facts and logical propositions, mathematical logic, and Occam's Razor. We make three remarks.

**Remark 1: Logic** is the pure thought to understand the world of sense without reference to any particulars, or with reference to general concepts, relations, and facts.<sup>5</sup> Thus, **the empirical** is symmetrical to **the logical**.

Remark 2: We used Einstein's concept of comprehensibility<sup>2</sup> to perform a cosmic analysis of the success/failure system or the mesocosmos. This cosmic analysis<sup>5</sup> started with **an erring universe**, which we related to the free creation of concepts and the general fact. Then, through deduction, we related the general fact to the law of nature, **PO** conditions for success = **PO** causes of failure. Thus, the truth of the general fact is assured by an explicit connection with the empirical universe. At this point, the success/failure system could be considered successfully discovered.

**Remark 3:** Russell<sup>26</sup> said that he did not profess to know what the right analysis of general fact was and should very much like to see it studied. We have seen the supremacy of Einsteinian science, as principle theory can guide us to study the general fact.<sup>5</sup>

In "The mesocosmos: The success/failure system," we followed the discovery of the success/failure system with a deeper dive into Einsteinian science with principle theory and the cosmos.

First, we compared the two methods of **principle theory** and **disciplinary research** to obtain an additional understanding of principle theory through the success/failure system.<sup>6</sup> This included considering that **nature** (the universe) is the sole authority and that **the laws of nature** are first-order scientific discoveries.

Second, we learned about the cosmos in Einsteinian science, which includes the three harmonious cosmic views or components of the universe defined by quantum mechanics, general relativity, and the success/failure system, respectively: the microcosmos, the macrocosmos, and the mesocosmos. 1,2,6 While we again challenged Einsteinian science with current scientific practices, this time the challenge was from the perspective of Einsteinian science, confirming that the cosmos includes the three harmonious cosmic components, **the triad.**4

Note that our next three papers – "An invitation to experience Einstein's scientific thoughts: Principle theory, the success/failure system, and the cosmos," "A theory of planetary evolution," and "An invitation to research Einstein's cosmos: Comparing the success/failure system with the theory of planetary evolution" are not considered here as they would divert from the main focus of this success analysis.

#### 3 Cosmic inertia

We began to address **cosmic inertia** in "Einstein's cosmos: A theoretical framework of the oscillating universe." Einstein said, "The supreme task [Aufgabe] of the physicist is to arrive at those universal elementary laws from which the cosmos can be built up by pure deduction." Now that we had the three levels of the universe (quantum mechanics, general relativity, and the success/failure system) as universal elementary laws, we could establish a theoretical framework of the universe (as a whole). 10

First, what is a true picture of the universe? Based on  $E = mc^2$ , the universe is a mass and energy distribution, redistribution, and transformation process. General relativity predicts that the universe is either expanding or contracting, and Hubble indirectly observed the expansion of the universe in 1929. Thus, one might conclude with some degree of certainty that our empirical universe is an oscillating universe.<sup>10</sup>

Second, we defined the past universe, the present universe, and the future universe respectively as the early universe, including the big bang, the expanding universe, and the contracting universe in (one cycle in) an oscillating universe. We used a combination of two approaches, the present-universe approach and the past-universe approach, to form a theoretical framework of the oscillating universe. All axioms and theorems in this theoretical framework are laws of nature; they are theories, principle theories, and also symmetry-principle theories.

Third, this theoretical framework was a great success. For the first time, the relationships between **nature** and **all sciences** fit into **one theoretical framework.** We examined current scientific practices<sup>20-22,27</sup> under this theoretical framework.<sup>10</sup> The theoretical framework also established **the initial hypothesis** that the true picture of the universe as a whole is an oscillating universe, to be confirmed later on.

Similarly, note that our next two papers – "Einstein's cosmos and principle theory: A new science in the twenty-first century" and "A challenge to experience the universe a whole" are not considered here as they would divert from the main focus of this success analysis.

In "Einstein versus Newton: Principle theory and Einstein's cosmos," we began to resolve the mysteries of the universe as a whole, that is, the discovery of cosmic inertia which would confirm the initial hypothesis that the universe as a whole is an oscillating universe. This was a real challenge as all sciences, including Newtonian science, Einsteinian science, current scientific practices, and free individuals, compete for a true picture of the universe! However, nature must not shirk the responsibility of overcoming this intellectual obstacle!

First, we analysed Newtonian science and Einsteinian science using Einstein's concept of **the antithesis between empiricism and rationalism.**<sup>1,2,5</sup> In Newtonian science, a theory of the universe is a unified theory of the mechanical universe, whereas in Einsteinian science, a theory of the universe is a single logical system of the universe as a whole. <sup>13</sup> In this regard, **Einsteinian science subsumes Newtonian science.** <sup>13</sup>

Second, we applied Einstein's **principle theory**<sup>1,2</sup> to experience and understand the universe as a whole. If the universe is expanding indefinitely, then the totality of mass energy must be mathematically infinite.<sup>13</sup> Since the totality of mass energy must be finite, our universe must be an endlessly expanding and contracting universe.<sup>13</sup> Since we considered the universe as a whole, that is, the system in its largest context, the universe has nothing acting on itself, and so **nature (the inertial universe)** accords with **cosmic inertia.**<sup>13</sup>

Third, Newtonian science focuses on forces as laws of nature and cannot address the problem of **the non-mechanical universe as a whole.**<sup>13,20-22,28,29</sup> Thus, we discovered cosmic inertia. However, we must recognise that all sciences compete for a true picture of the universe. We must refute other proposals to have the final say. In this paper, <sup>13</sup> we refuted **the multiverse** with the following summarised argument: if there are detached wholes beyond our universe (the multiverse), by definition, they have no connection with our universe. The universe concerning us is **our only universe**. In addition to this refutation, many current concepts including **disciplinary laws** were refuted in later papers. <sup>14-16</sup>

By the time we wrote "Science: Newton versus Einstein," we were well versed in Einsteinian science with principle theory and the cosmos. Thus, we began to illuminate two sciences in the context of the Scientific Revolution based on the concept of the laws of nature: Newtonian science, the first scientific enlightenment and Einsteinian science, the second scientific enlightenment. Whereas Newtonian science addresses only forces as laws of nature, Einsteinian science accounts for all of the laws of nature.

Current scientific practices<sup>20-22;28-30</sup> concerning a theory of the universe still cling to Newtonian science, despite the inclusion of general relativity in their considerations.<sup>14</sup> We disputed these approaches.<sup>14</sup> First, since **nature** is the origin of **the laws of nature**, there must be **nature**, i.e. something beyond the four forces, that accounts for the universe and sustains the four forces.<sup>14</sup> **Newton's first law** was mistakenly defined without an awareness of **cosmic inertia (an oscillating universe)** and its relation to **gravity (a moving universe)**. **Nature** (the universe) is a great eternal riddle, rather than a life span studied by cosmologists.<sup>14</sup>

The above analysis reaffirmed that **cosmic inertia** provides **a true picture of the universe**, and that current scientific practices<sup>20-22;28-30</sup> concerning a theory of the universe are futile. The universe is **a constant**, which accords with cosmic inertia with

 $E = mc^2$  and the constant of nature  $\alpha$ .<sup>14</sup> Is Einsteinian science a new science? Yes, it is. The scientific community as yet avoids it.

In "Einstein's science: Our contributions, cosmic inertia, and dissemination," we outlined our contributions to Einsteinian science and challenged the scientific community regarding cosmic inertia and the dissemination of Einsteinian science within our work. 15,31

First, we presented a deep understanding of **nature** and the **sciences** by providing **the overall structure of the laws of nature.**<sup>15</sup> Unlike Newtonian science, Einsteinian science can deliver such an understanding. We based this understanding on the concept of **the aim of science**,<sup>1,2</sup> which was used in the origins of our work.<sup>3</sup> One may recognise how we correctly and progressively obtained an increasingly deeper understanding of **Einsteinian science**, **nature**, and the **sciences**.

Second, we praised **cosmic inertia** with more than ten concepts.<sup>15</sup> This reaffirms that cosmic inertia provides a truer picture of the universe than ever before. The most important of these concepts is that **cosmic inertia** is indeed **a theory of everything,<sup>15</sup>** which is the common goal of Newtonian science. Thus, current scientific practices<sup>20-22;27-30</sup> concerning a theory of the universe, such as quantum gravity, string theory, and others, are definitely languishing in their pursuit of the common goal. On the other hand, in Einsteinian science, we may just begin to pursue a theory of the universe with cosmic inertia.

In "Einsteinian science versus Newtonian science: The challenges of Polanyi's premise of science," <sup>16</sup> we culminated our work with the concept of the structure of science. <sup>16</sup> We used the challenges of Polanyi's premise of science<sup>32-35</sup> to contrast Newtonian science with Einsteinian science and their respective structures.

The sciences must be sustained by the belief that there is something there that can be understood, that is, the premise.<sup>32</sup> What is the real premise of science? Nature (the universe) is the real premise, as the sciences aim to seek all laws of nature.

Thus, with the success/failure system and cosmic inertia, Einsteinian science has the **ultimate** structure of science in the Scientific Revolution, whereas Newtonian science does not.<sup>16</sup> With the completion of the primary task of uncovering **cosmic inertia**, it is timely and necessary to seek a single logical system of the universe (as a whole).<sup>16</sup>

#### 4 Conclusions

We have analysed a skyrocketing cascade of six successes of two new scientific discoveries below:

- (1) The discovery of the success/failure system,
- (2) The establishment of a theoretical framework of the universe,
- (3) The discovery of cosmic inertia,
- (4) The enlightenment of two sciences, Newtonian science and Einsteinian science, in the context of the Scientific Revolution,
- (5) A deep understanding of **nature** and the **sciences** based on the structure of the laws of nature, favouring Einsteinian science and cosmic inertia,
- (6) Another deep understanding of **nature** and the **sciences** based on the structure of science, similarly favouring Einsteinian science and cosmic inertia.

Our work has built up a model of nature and its laws through our learning of Einsteinian science, and contemplated how this could transform scientific understanding and discovery. The respective contributions of **three "cosmotians,"** Newton, Einstein, and us, regarding a theory of the universe can be summarised as follows. Newton was the creator of Newtonian science, which considers only forces as the laws of nature. Einstein was the creator of Einsteinian science, which aims to uncover all of the laws of nature. We added to Einsteinian science the main concepts that **nature** (the universe) is **a constant** and accords with **cosmic inertia, a theory of everything.** 

Disturbing sciences: Einsteinian science with the success/failure system and cosmic inertia will change the outlook of scientific fields. The sciences praise widely accepted and active scientific practices, but most importantly the sciences desperately desire new scientific discoveries connected to nature. The scientific community must embrace Einsteinian science under the theoretical framework of the oscillating universe immediately. Before entering this new promising science, we are still awaiting a journal editor<sup>15</sup> to publish our work to disseminate and further develop Einsteinian science. May the scientific community tackle our (a free individual's) contributions to Einsteinian science and nature with respect and justice.

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