An invitation to research Einstein's cosmos: Comparing the success/failure system with the theory of planetary evolution

Dong-Yih Bau

Department of Information Management, Da-Yeh University,

168 University Rd., Dacun, Changhua 51591, Taiwan, R.O.C.

E-mail: bau@mail.dyu.edu.tw

May 1, 2019

Abstract Einstein is one among a select few in humanity. Einstein's cosmos is the main subject of the modern science of the twenty-first century. Herein, we discuss Einstein's scientific thoughts on the cosmos and principle theory. We also present a comparison of two theories of the mesocosmos: the success/failure system as part of Einstein's principle theory, and the theory of planetary evolution based on the ideas of Feynman, Polanyi, and Weinberg. The aim of this paper is to exalt Einstein by urging the general public, scientists, and philosophers to participate in researching Einstein's cosmos, either directly or indirectly. We believe that Einstein's scientific teachings represent a blessing to humanity and comprise one of humanity's highest sources of intellectual wisdom. Our work on Einstein's scientific thoughts includes principle theory, the success/failure system, and the cosmos. These concepts deserve widespread attention, investigation, and experience, and should be the focus of scientific discovery and credit.

Keywords Einstein's cosmos, Principle theory, Research, Success/failure system, The mesocosmos

1 Einstein's cosmos

The greatness of the universe and the scientific discoveries surrounding it are essential concerns for humanity.[1,2] Einstein said, "This universe of ours is something perfect and susceptible to the rational striving for knowledge."[2:52] **Einstein's problem of the cosmos refers to the logical understanding of how the empirical universe was created and how it continues as it is empirically. Thus, in one single discovery, the three levels of the empirical universe, that is, the microcosmos, macrocosmos, and mesocosmos, can be defined by quantum theory, general relativity, and the success/failure system (or their structurally similar theories), respectively.**[3–7]

The cosmos constitutes the most basic mysteries of the empirical universe and forms the foundation of the whole of science.[6] Einstein's articulation of the problem of the cosmos is a gift to humanity as it can lead us to rethink our conceptualization of science. Thus, "string theory," "quantum gravity," and the "theory of everything" are current *partial* solution strategies for the problem of the cosmos.[6,7] None of these incorporate the mesocosmos, simply because an understanding of the mesocosmos did not yet exist when they were formulated.[6,7] It is a grave concern that these theories of the cosmos lack the mesocosmic component.[6,7] **How can one identify an "ultimate theory" of the universe without accounting for all of its cosmic components?** Einstein's principle theory recently led us to the development of "the success/failure system" as a way to understand the mesocosmos.[3–7] Future solution strategies for the problem of the cosmos should incorporate the success/failure system, simply because the success/failure system is the only theory that reflects the mesocosmos, which is one of the three cosmic components.

The study of the problem of the cosmos should regain academic freedom, such that the general public, scientists, and philosophers can be emancipated from their domain of expertise and allow scientific inquiry to rely fully on the authority of nature or the universe itself.[6] The cosmos should become a renewed source of research in the beginning of this new century. Thus, we propose the establishment of a new independent journal on Einstein's cosmos as a publication outlet dedicated to the problem of the cosmos, as opposed to the current state of the literature, which comprises a variety of disciplinary research journals.[6] A divergence into several journals may be required in the future, but the single goal of understanding the cosmos should be retained.

2 Principle theory

It is often said that while understanding the mysteries of nature is difficult, communicating this understanding to others is even harder still. We believe that Einstein's principle theory approach, which led to the discovery of general relativity, can solve these kinds of problems.[1,2] **Einstein's principle theory is a highly constraining method to help identify the logical structure of the empirical universe.**[3–7]

The success/failure system is a principle theory applied to understanding the mesocosmos. T**he mesocosmos refers to our immediate experiences in daily life and can be extended without exceptions on the scale of the universe to show that our universe is an erring universe.** Einstein's articulation of the principle theory approach has immensely benefited humanity. We outline several characteristics of this method below to aid a deeper understanding.

First, the method's scope of study is as wide as the scale of the universe, that is, the totality of existence.[3–7] Contrary to common sense, which assumes that any method addressing aspects of the universe may cause the problem of unclear boundaries, the problem of the cosmos is well-defined.[3–7]

Second, logical constructions and logical simplicity comprise the tasks and requirements of the method. This can lead individual scientists into confusion and even anger or contempt as to why the principle theory is so uncomfortably abstract and simple. Nevertheless, logical constructions refer to our basic understanding of the empirical universe.[3–7] Here, logical "simplicity" alludes to the simplicity of logical constructions, which means that a minimum of primary concepts and relations is used to provide such an understanding.[3–7]

Third, logic is attributed to the empirical universe.[6] **The principle theory approach treats empiricism and rationalism impartially.**[5–7] Thus, this method extends beyond Euclidean geometry, which is a purely mathematical system with its axioms that have no connection to the empirical world. On the other hand, the success/failure system (with its mathematical formulations among scientific concepts and relations) is a scientific discovery regarding the mesocosmos that can be personally experienced.[5–7] The mathematical formulation for the success/failure system in the mesocosmos is as follows:

$$PO_{\text{conditions for success}} = PO_{\text{causes of failure}}$$

This can be read as "in the part-whole structure of a success/failure system, there exists partial ordering for the dependency relation of the conditions for success, as there is of the causes of failure, symmetrically."[3,5]

3 Comparison between two theories of the mesocosmos

To understand Einstein's principle theory and the cosmos more deeply, we suggest comparing the success/failure system[3–7] with the theory of planetary evolution,[8] the latter being the earliest version of the former. Both address the problem of the mesocosmos. While the success/failure system is part of Einstein's principle theory,[3–7] as we identified recently, the theory of planetary evolution is a mix of conceptual and methodical ideas from Feynman, Polanyi, and Weinberg.[8] Via comparisons and a literature review,[1,2,9–14] we can identify the following three facts as well as the value of the theory of planetary evolution.

First, only Einstein comprehended the existence of the mesocosmos; no others, including Feynman, Polanyi, and Weinberg, were aware of, let alone experiencing, its existence. For example, Feynman said, "Since among low energy phenomena nobody knows where to look, all of the

experiments today in this field of finding out a new law are of high energy."[9:158] Weinberg stated, "Of course, the planets are important in some ways. We live on one of them. But their existence is not incorporated into the laws of nature at any fundamental level."[11:164] **While Einstein expected the mesocosmos to be an order in thought, other scientists perhaps encountered the hardest questions in everyday life, which forms a part of the mesocosmos.[6]**

Second, only Einstein's principle theory can help identify the success/failure system, a theory of the mesocosmos that facilitates an unprecedented understanding of both the universe and scientific discovery (i.e., rigorously creating new scientific concepts that are directly connected with the empirical world via scientific discovery).[3–7] Despite their Nobel-prize-winning discoveries in elementary particle physics in the microcosmos, Feynman[9,10] and Weinberg's[11,12] scientific methods are not applicable to the problem of the mesocosmos. Thus, without the guidance of a highly constraining method, we endeavoured to develop a *lengthy, untenable* theory of the mesocosmos, with *indefensible* concepts, logic, implications, and conclusions, entitled "A theory of planetary evolution."[8]

Third, Einstein's principle theory not only allowed us to define the success/failure system,[3–7] which makes the hidden mysteries of the mesocosmos visible, it also permitted us to recognize the problem of the cosmos,[4,6,7] as shown in Section 1. On the other hand, without Einstein's principle theory, due to Polanyi,[13,14] the theory of planetary evolution *wrongly* considers *evolution* in accordance with Darwin's theory of (species) evolution developed in 1859, which ignores the existence of not only the mesocosmos but also the cosmos.

Finally, we dismiss the theory of planetary evolution as *unscientific*. Its only value may be that it shows that the success/failure system[3–7] is comparably a scientific discovery that rigorously uses logical analysis and mathematical reasoning to reveal the logical structure of the mesocosmos.[3–7]

4 Conclusions

Science is advanced by discovery, but scientific discovery is not an easy task and can be an incredible process. This is attested by the salient fact that, at present, across scientific disciplines, more than one and a half million articles are produced annually, with rare news or claims of scientific discovery. Concurrently, work continues towards a final theory under which quantum mechanics and general relativity can be logically identified in a single discovery of the empirical universe.[6] Technically, this means that we can easily create or (re)use exquisite language and mathematics in an article to impart knowledge without actually discovering anything. Considering science in terms of quantity and exquisiteness, rather than quality and discovery, is misleading. Scientific advancement is stagnating at present. Further, the most important problem associated with science itself is the lack of a system of science, that is, the lack of concern with the universe as a whole.[6]

In relation to the above, Einstein's cosmos seems to be a promising twenty-first century paradigm, since it is solely about the universe.[3–7] We claim that our series of work, comprising four technical papers and two cordial invitations for experience and research, progressively and clearly urges the

general public, scientists, and philosophers to begin researching the cosmos. Life is impermanent (and thus confusing), and humanity should be concerned with the problem of the cosmos during their lifespan, once this scientific problem has been released from Pandora's Box. **Further, once the next generations of Einstein research his cosmos, can a transcendent-lucid understanding of the cosmos be far behind?**[6] After sixteen years of passionate and heuristic research on the mesocosmos,[8] we want to spread this scientific gospel in 2019. One day, humanity will be proud to say that they are all "cosmotians": beings who are acquainted with Einstein's cosmos, or his so-called "God's thoughts."[1,2,4,6]

Acknowledgments

The author would like to thank Anthony Abram for editing and proofreading this manuscript. I thank the Da-Yeh University Library for its collection of reading materials and support during the period of this study on Einstein's principle theory, the mesocosmos, and the cosmos.

References

1. Calaprice, A. The Ultimate Quotable Einstein Princeton Univ. Press: (2010).
2. Einstein, A. Ideas and Opinions Bonanza Books: 52 (1954).
3. Bau, D. Y. The success/failure system hypothesis. IJASRM 3 (3): 30–34 (2018). http://ijasrm.com/wp-content/uploads/2018/03/IJASRM_V3S3_496_30_34.pdf
4. Bau, D. Y. The cosmos with the success/failure system. IJASRM 3 (12): 94–97 (2018). http://ijasrm.com/wp-content/uploads/2018/12/IJASRM_V3S12_1044_94_97.pdf http://vixra.org/pdf/1811.0354v1.pdf
5. Bau, D. Y. The logic of the success/failure system. IJASRM 4 (2): 254–258 (2019). http://ijasrm.com/wp-content/uploads/2019/02/IJASRM_V4S2_1199_254_258.pdf http://vixra.org/pdf/1901.0207v1.pdf
6. Bau, D. Y. The mesocosmos: The success/failure system. IJASRM 4 (4): 1–6 (2019). http://ijasrm.com/wp-content/uploads/2019/04/IJASRM_V4S4_1296_1_6.pdf http://vixra.org/pdf/1903.0046v1.pdf
7. Bau, D. Y. An invitation to experience Einstein's scientific thoughts: Principle theory, the success/failure system, and the cosmos. (2019). http://vixra.org/pdf/1904.0427v1.pdf
8. Bau, D. Y. A theory of planetary evolution. (2019). http://vixra.org/pdf/1904.0548v1.pdf
9. Feynman, R. The Character of Physical Law MIT Press: 158 (1967).
10. Feynman, R. Six Easy Pieces: Essentials of Physics Explained by Its Most Brilliant Teacher Addison Wesley: (1994).
11. Weinberg, S. Dreams of a Final Theory Pantheon Books: 164 (1992).
12. Weinberg, S. Facing up: Science and Its Cultural Adversaries Harvard Univ. Press: (2001).

13. Polanyi, M. Personal Knowledge: Towards a Post-Critical Philosophy The Univ. of Chicago Press: (1958).
14. Polanyi, M. The Tacit Dimension Doubleday & Company: (1966).