

The Photon Big Bang

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The photon big bang is rather simple from my consideration.

The near zero particle of photon, its momentum space now is at its smallest wavelength, but its momentum frequency the highest, and the energy the highest. The photon cannot be zero at its wavelength, only near zero. They are too small to be sensed by any known matter. Their only fate is simply moving as dark energy. They can collide with themselves, (e.g., when they move toward opposite directions ($\gamma \rightarrow \leftarrow \gamma$)). This collision is the big bang mechanism in my term.

Here I have three new or refined concepts.

1. The accepted doctrine says that when two photons meet, they simply pass by each other. But in my prediction, they do collide. This is not new, though not proved, but important.
2. The collision may not just as predicted by Breit-Wheeler pair ($\gamma\gamma' \rightarrow e^+ e^-$) (1934), and many others since then. Rather, I propose their energy redistribution in space.

The center of the collision is with the highest energy. As the distance goes farther and farther from the collision center, the energy also decreases, smaller and smaller.

3. So the collision itself is both the big bang and the big inflation. This redistribution of the energy as big inflation could provide energies to generate matters / energies at various levels.

This can be supported by the observation of the gamma ray burst as well as the ultra-high-energy cosmic rays. They can be the results of the photon big bang.

Note: It does not exclude other means to induce the photon big bang. It also provides the mechanism for the formation of dark energy, which may be generated through Inverse Compton Effect, or other pathways. It follows my conclusion in 2012, "A photon is the grand unification particle", though I have worked on this topic since 2008. (Reference: Yang, C. "Advance in theory of everything" <http://www.energinity.com/2012proceedings1.pdf>)

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New Scientific Revolution of Convergence - Three Breakthrough Areas

Added: You You Tu and SCI

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Abstract: Dr. Chun Li Bai, President of Chinese Academy of Sciences, has addressed an important topic of new scientific revolution over the past several years (most recently on July 5, 2015). He concludes that “Currently, the global new round of revolution of science and technology and industry transformation is just flourishing”. Dr. Susan Hockfield, MIT president emerita, outlines the Third Revolution of Convergence in a *Science* editorial in 2009, on which Dr. Phillip Sharp et al (12 scholars) further elaborate in a White Paper in 2011. A few other scholars (Gilles Cohen-Tannoudji, Sydney Brenner, David Gross, Freeman Dyson, and others) and organizations (American Association for the Advancement of Science, AAAS, and others) have also presented lectures or symposia relating to scientific revolutions in recent years. Now the consensus seems arriving at the point that a true scientific revolution is ongoing. Following the brief review, in the manner of complement, I will highlight three breakthrough areas in some concrete research of this new scientific revolution, using energinity as an example: 1. Existence energy equivalence; 2. Biological consciousness; 3. Faith evolution. And on faith evolution, I will discuss that faith is believing. Believing, the same as consciousness, is universal among all organisms. Various forms of believing can be easily observed and subject to evolution. If time permits, I will discuss You You Tu’s Nobel Prize without SCI paper. And I believe that other scientific work such as books and websites of original research should be recognized by mainstream science community. (Ref: Back to Books, *Nature* **463**, 588, 2010).

September 29 – November 29, 2015

Charles H. Townes' Predictions and Realizations - "The Convergence of Science and Religion"

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Charles H. Townes was born on July 28, 1905 and passed away on January 27, 2015. He was certainly remembered for his contribution to the development of maser and laser, for which he was awarded the Nobel Prize in 1964. In my opinion, equally (or more importantly), Townes should also be remembered for his long-time advocacy for the convergence of science and religion, for which he was awarded the Templeton Prize in 2005. Townes' 1966 essay, "The Convergence of Science and Religion" (*Think*, IBM, 1964), established his search for commonality between religion and science as a unique idea. At the time, the relationship between science and religion had been generally considered either as conflict or separate two realms. Being a provost of MIT and professor of physics, Townes wrote on science and religion, "their difference are largely superficial, and ... the two become almost indistinguishable if we look at the real nature of the each". Townes reflected that his peers from both camps considered him "extreme", and some expressed outrage and objections for publishing his paper and promoting his idea. Almost half a century has passed since Townes' prediction; continuously, numerous scholars have made an effort to integrate science and religion. Creation Science as well as the new Intelligent Design movement has been unable to gain recognition from mainstream science. It had been generally agreed that it was impossible to converge science and religion. Science could neither prove nor disprove the existence of a deity. Still, some scholar had predicted that science would disprove the existence of God. However, there are some cornerstones have been made through several scholars' efforts. Here are significant examples. It is unclear when Sir John Templeton (1912-2008) started to commit to the understanding of religion with science, but he established the Templeton Prize in 1972, which underscores his vision that "advances in the spiritual domain are no less important than those in other areas of human endeavor". Sir John also published his inaugural book, "The Humble Approach: Scientists Discover God" in 1981, established the John Templeton Foundation in 1987, and also wrote other books to carry out his philanthropic vision. John Polkinghorne, President emeritus of Queens' College of Cambridge University, decided to be trained as an Anglican priest in 1977, which concluded his 25 years of career as a full-time theoretical physicist. Over the course of decades, Polkinghorne treated theology as a natural science, gave lectures and wrote books, and was awarded Templeton Prize in 2002. Francis Collins, the current Director of National Institutes of Health, termed BioLogos and proposed a new version of theistic evolution, (refer to his 2006 bestselling book, "The Language of God"). BioLogos is the best attempt to bridge faith and science as of 2006. The theistic evolution is accepted by mainstream religion, though it has not been considered a scientific theory by mainstream science. By 2007, Polkinghorne published his book, "Quantum Physics and Theology: An Unexpected Kinship". This book further integrated science and religion at a new level. In his book, following a discussion of "Waves" as quantum energy, special relativity, etc., Polkinghorne immediately discussed "Spirit" as power of divine (not impersonal). He did not explore the intrinsic relationship between the two forms of energy, "Waves" and "Spirit", but went on to state Holy Trinity as the final best explanation of "Spirit" as his Theory of Everything (ToE). By 2008, after

trying out many thought experiments, I was able to reduce the complicated religious power of believing as a form of energy, to define required new concepts, and to successfully build a pathway for the convergence of science and religion. Collins' lectures and books have been inspirational for me. However, I did not know Polkinghorne's 2007 book until after I completed my own work of frame. I shared with both scientific and religious communities in 2008, and I published my own book draft, "Faith Science", in 2009. Then people told me the name of Polkinghorne. I read his books and found the one I referred to was particularly interesting to me. I was surprised as well as pleased to read how Polkinghorne had done well in presenting the very close relationship between science and religion, and in particular, he comparatively illustrated scripture with modern physics. At one point, Polkinghorne clearly arrived at the two ends that would serve for building a bridge.

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Revolutions without Calling Them Revolutions

Western Medicine in China for 180 Years Celebrated

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On November 4, 1835, Peter Parker (1804-1888), a native of Framingham, Massachusetts, a Yale graduate, a physician, and a Christian missionary opened an eye hospital (treating various diseases) in Guangzhou, China. Although free of charge, nobody visited it the first day. The second day, four came. The third day, a few more. Good services paid off, and a crowd of patients came eventually. Many firsts were done here. The first eye surgery, the first tumor resection, etc. Truly, this started a revolution (though never called that before) in China's history of medicine. Then, more physicians and missionaries arrived in China. Gradually, China has developed its own western medicine system. And eventually, western medicine becomes

mainstream medicine in China. This very first western hospital has developed into or contributed to several current ones - Sun Yat-sen Memorial Hospital, the Zhongshan Ophthalmic Hospital, the Sun Yat-sen University Cancer Center, etc. They bear the name of Dr. Sun Yat-sen (more frequently, Sun Zhongshan, or Zhongshan, 1866-1925) because Dr. Sun studied medicine here in 1886. Not only did Dr. Sun play a role in the western medicine movement, but also he started to plan another revolution to change the entire history of China, ending the emperor system of two thousand years, and leading China to move toward a democratic nation. Dr. Sun's motto - Treat disease, treat body, and treat soul; Save people, save nation, and save world (医病医身医心; 救人救国救世) - has been an inspiration for training doctors of generations and generations. Today, the hospitals and the university are among the top rankings in China and are striving to be among the top ones in the world. Therefore, revolutions are continuing. This year marks the 180th anniversary of the first western hospital in China. A celebration was held on the university campus on November 1, 2015. It was organized by Sun Yat-sen Memorial Hospital and presided by the hospital leadership (Drs. Wang Jingfeng, Shen Huijiong, and Song Erwei). A video of the hospital history was reviewed. A new building at south campus opened for functioning. The university vice president Dr. Yu Minbin gave a speech, and two academicians of Chinese Academy of Sciences, Drs. Lau Wanyee and Zhan Qimin presented lectures on medical training and research (translational and precision medicine). Two hospital heads, Drs. Ding Yitao of Nanjing, and Zhou Xiaoguang of Xinjing, presented lectures on hospital management and telemedicine. As an honorable guest, I was invited to attend the celebration. During this beautiful season, I returned to the mother school after many years since graduation and presented my recent research on new scientific revolution. Recalling the pleasant time there, I feel that our generations are surely bearing the burden of taking on today's worldly challenges and opportunities, and continuing revolutions.

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