

## 主編之序（中譯）

香港中文大學天主教研究中心本年度期刊將致力討論科學與信仰的關係，這亦是一個具爭議且棘手的議題。無容置疑，隨著科技進步，現代世界不斷改變，這議題十分重要。與此同時，不管好壞，宗教經常被新聞報導成爲一個文化及社會上的主要勢力。科學與宗教曾經一度成爲伴侶，現在他們卻被理解爲經常在道德以及意識形態層面上發生衝突的競爭者。

縱貫歷史，有很多科學家都是信徒，例如：孟德爾、哥白尼、開普勒、牛頓、巴士德、愛迪生等。儘管伽利略與教會有磨擦，但是他仍然是一個熱心的信徒，他亦有幾位樞機主教朋友。誠然，科學與信仰的關係從伽利略及達爾文起就變得開始緊張。事實上，兩者的關係在現代有兩個非常重大的割裂：第一個割裂是在理性層面，涉及科學的方法與哲學。當實證方法開始興盛，科學就掙脫了傳統哲學的思辨方法。第二個割裂使理性從信仰中分離，兩者被看成互不相容。筆者於此並不打算闡述隱藏在分裂背後複雜的歷史文化因素。即使有不同的方法去發掘真理，然而天主教仍繼續相信及堅持真理是不能分割的。因此，將真理分爲科學上的真理以及啓示上的真理顯然是一種過於表面的二分法。這見解亦可見於第一次梵蒂岡大公會議的文件、教宗若望·保祿二世的通諭〈信仰與理性〉（*Fides et Ratio*）及教宗本篤十六世的一些文章中（如在雷根斯堡大學的演辭）。現在，我們應把握良機以其他角度思考科學與信仰兩者的關係。

讀者將會透過本期刊不同的文章瞥見科學及信仰所引起廣博而複雜的議題。在這個寬闊而多元的題目上，雖然文章數量不多，但是已包含了一系列廣博的觀點。文章強調信仰與科學的歷史關係、有關兩者如何互相影響等方法論問題以及信仰或者科學能否有益於對方等思考。有些文章強調兩者的合作，有的則列舉

兩者的衝突與挑戰。有的作者以神學信仰為文章的切入點，然後逐漸延伸到科學的探討；有的則以科學開始，然後嘗試將其與神學建立討論的橋樑。

〈宇宙常數：宇宙的非凡微調的例子〉(The Cosmological Constant: an Example of the Extraordinary Fine-tuning of the Universe)一文，作者提出了一個有趣的理論性的問題：物理學能否證明有創造者存在？作者從科學數據入手，論證一個非凡微調的宇宙是建基在宇宙擴張的物理特徵。非常精準的宇宙學常數指出現時的宇宙只要有些微偏差，就不能存在。同樣，對於生物甚至有智能的生物的存在，這個常數給宇宙提供了精確的參數。這亦是所謂「人擇原理」。宇宙的非凡微調幫助我們推測宇宙存在一個充滿智慧及設計的創造者。

多米尼克•蘭伯特(Dominique Lambert)介紹了喬治•勒梅特(Georges Lemaître)的論文，論文指出靈性與自然對於真理的解釋其實不是兩種無法相容的方法，兩者不會妨礙信徒將其科學上與信仰上的使命同時地實踐出來。至於另一篇文章〈人類在進化宇宙中的地位〉(Humanity's Place in the Evolving Cosmos)對人類的演進以同樣的方法論處理與上述一樣的問題。文章指出信仰與科學是對理解現實的兩種不同方法，前者回答「為甚麼」而後者回答「如何」。與此同時，作者相信在宇宙學的意義以及人類的形成中有一深層的延續性，其中我們對真理、善與美的接納，將揭示真實的最終結構。

〈科學與宗教研究相關的還原論問題〉特別論述科際間有關方法論的問題。作者指出還原是科學成功之關鍵因為還原容許約化原則，這正是不同的科學發展所需要的共同基礎。然而，當還原趨向極端，以及當還原論變成一個意識形態或者成為一個排斥其他方法及學科的操作手法時，這就有危險了。其中的學科如神學，因為既沒有應用科學方法或者不能還原至科學，所以被貶視為不真實或不存在的學科。作者提倡在科際間以一個宏觀的角度思考，這是一個較為弱或者較為適度的還原論形式，其角度較溫

和、較開放、較實際。這個方法避免陷入一些唯物主義（將任何事物還原至物質）或唯心主義（將任何事物還原至靈性）的思考危機。作者特別意識到嘗試將宗教或者信仰經歷透過科學方法還原是困難的，因為這兩個領域是處於同等的水平系統，因此彼此是不能互相還原。正如作者所言：「這兩個理論系統原本是平等的，甚至可以說是不分高下的，那麼也就無所謂還原了，至少沒有本體論層次上的還原。」對整個學界健康來說，真正需要的是讓我們利用謙遜作良藥，承認各種學科的局限性。

筆者自己的文章〈科學需要倫理嗎？〉分析了在科學中人類活動的價值範圍。這同樣有巨大的挑戰性。一方面，有一信念認為科學家及科學工程應該免疫於任何外在的批評，這種不健康的高傲最終使科學變為科技式的帝國主義或者是一個專橫的命令。另一方面，時下對於倫理方法中存在宗教原素仍有一些偏見，偏見認為這些宗教倫理方法過於偏執或者容易引起分裂。然而，將道德及宗教的貢獻排除在科學的發展中將會是人類將來的一大威脅。

斯坦尼斯拉夫（Stanislav Južnič）的〈耶穌會士劉松齡與北京的科學技術〉一文使我們回想起 17、18 世紀時科學是被用來幫助教士在中國傳播信仰。另外，多米尼克·蘭伯特（Dominique Lambert）一書同樣展示天體物理學家神父喬治·勒梅特（Georges Lemaitre）是怎樣相信「一個真實的靈性是可以與科研相容以及一個信徒是怎樣能夠成為先進科研的參與者而不具窘容。」今天在科學與信仰之中即使出現對立，然而，這情況不會永遠如是，我們希望有一天兩者能再次和平共處。誠如〈信仰與理性〉通諭（*Fides et Ratio*）指出：「信心與理性就像一雙翼般把人類的精神提升到對真理的沉思；上主已將對真理追求的渴望置於人心之中。換言之，即是了解他們自己。因此，透過了解並愛慕上主，不論男女都可以達到他們對信仰上的滿足。」

## Editor's Word

This year's publication by the Centre for Catholic Studies at the Hong Kong Chinese University is dedicated to the thorny question of the relationship between science and faith. One cannot deny the importance of this very current topic, since the modern world is constantly changing as a result of the advances of science and technology. At the same time, for better or for worse, religion frequently appears in the news as a major force in culture and society. While science and religion were one-time partners, they are now perceived as competitors with frequent clashes at the ethical and ideological levels.

Throughout history, many scientists were believers: Mendel, Copernicus, Kepler, Newton, Pasteur, Pascal and Edison to name a few. In spite of his trouble with the Church, Galileo was an ardent believer and friend of several cardinals in his days. Certainly, the relationship between science and faith has turned uneasy since Galileo and Darwin. In fact, two monumental splits occurred during modernity. The first schism occurred at the level of reason, between the methods of science and philosophy. With the rise of the empirical approach, science broke away from the traditional speculative method of philosophy. The second division consisted in reason being divorced from faith, the two being branded as incompatible. The cultural and historical reasons behind these separations are too complex to elucidate here. However, Catholic belief has always held that truth is indivisible, even though there can be many approaches to discover it. Hence, the dichotomy between scientific truths and revealed truths are in fact only apparent. This has been repeated in the

documents of the First Vatican Council, the Encyclical *Fides et Ratio* by Pope John Paul II, and the writings of Pope Benedict XVI (e.g. the Regensburg address). Now it is time for us to take another look at this question.

Looking at the articles contained in this journal, readers will get a glimpse of the immensity and complexity of issues confronting science and faith. Though few in number, these articles contain an enormous range of perspectives on a wide variety of subjects. The contributions highlight the historical relationship between faith and science, the methodological questions regarding how these two disciplines interact, and whether faith can say something useful to science and vice versa. Some articles highlight the areas of collaborations while others enumerate the areas of conflict and challenges. Some authors start with theology and strive to reach out to science, while others begin with science and attempt to build a bridge to theology.

The article “The Cosmological Constant: an Example of the Extraordinary Fine-tuning of the Universe” raises an interesting theoretical question of whether physics can or cannot disprove the existence of a Creator. Starting from scientific data, the author presents the evidence of a very fine-tuned universe based on the physical characteristics of the expansion of the universe. The very precision of this “cosmological constant” indicates that the current universe as we know it would not have existed if it were even minutely different. Likewise, this constant provides the universe with exact parameters for not just life but intelligent life to come into existence. Known sometimes as the “anthropic principle,” this fine-tuning of the universe can help us to infer the existence of a Creator of the universe with intelligence and design.

Thus, the question of methodology in the interaction between faith and science is inevitable. In his book *The Spiritual Itinerary of Georges Lemaître*, Dominique Lambert introduced Georges Lemaître's thesis of the two ways (spiritual and natural) towards truth as irreconcilable methods, which however, does not preclude the believer to live out his scientific and religious vocations simultaneously. The article "Humanity's Place in the Evolving Cosmos" looks at the same question of methodology when it comes to human evolution. Faith and science are two different approaches to reality, one answers the question "why" while the latter answers the question "how". At the same time, the author believes there is a deep continuity between cosmological meaning and the formation of the human person, where our openness to truth, goodness and beauty in some way reveals the ultimate structure of reality.

The methodological question is addressed specifically by "A Methodological Question on Reductionism in Science and Religious Studies" on reductionism in interdisciplinary studies. The author notes that reduction is the key to success of science because it allows for the generalization of principles which is necessary to provide a common foundation for scientific endeavors. However, there is a danger when reduction becomes extreme, and when reductionism becomes an ideology or *modus operandi* that excludes other methods and disciplines. That is, disciplines such as theology, which does not apply the scientific method or cannot be reduced to science, must be discounted as unreal or non-existent. The author of this article advocates a wider perspective in interdisciplinary studies, which is a weaker or modest form of reductionism that is less extreme, more open and realistic. This approach avoids both the pitfalls of materialism (reducing everything to matter) and spiritualism (reducing everything to the spiritual). The author especially recognizes the difficulties raised in trying to reduce religion and

religious experience using the scientific methods because these spheres are equal at the level of system and therefore irreducible to one another. As the author writes, “Since these two theory systems are basically equal, one system is not superior to the other, we cannot speak of reduction, or at least at the level of ontological reduction.” What is needed is a healthy dose of humility to recognize the limits of each discipline.

My own article “Does Science Need Ethics” analyzes the axiological dimension of human actions in science. The challenges here are also immense. On the one hand, there is a belief that scientists and the scientific enterprise should be immune to any external critiques, with an unhealthy exaltation that culminates in a type of technological imperialism or imperative. On the other hand, there is still a strong prejudice against religious input in the ethical methods that is deemed too sectarian and divisive to be of use. However, the exclusion of ethics and religious contribution in the face of scientific progress is a great threat to the future of humanity.

The article “The Great Jesuit Hallerstein and the Science and Technology in Beijing” by Stanislav Južnič recalls the historical past where science was employed to help with the spread of faith in China during the 17th and 18th Century. The book by Dominique Lambert also demonstrated how astrophysicist and priest Georges Lemaître believes that “an authentic spirituality is compatible with scientific research and how a believer, without any embarrassment, can be an actor in advanced scientific research.” Even though there seems to be antagonism between science and faith today, the good news is that this is not necessarily permanent and we hope that one day, they can become friends again. As *Fides et Ratio* indicates, “Faith and reason are like two wings on which the human spirit rises to the contemplation of truth; and God has placed in the human heart a

desire to know the truth—in a word, to know himself—so that, by knowing and loving God, men and women may also come to the fullness of truth about themselves.”