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Science and Spirituality: No Reason to Fear One Another]



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The questions we face are so complex that we need compelling reasons before excluding any perspective from our pursuit of knowledge and solutions, argues Thomas Bruhn.

Since my youth, it has always been self-evident to me that my interests in (natural) science and spirituality are not mutually

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exclusive. On the contrary: my scientific understanding of the world has consistently informed my spiritual view of life – and, conversely, my spirituality has shaped the way I perceive the world as a scientist. My former astrophysics lecturer, Professor Erwin Sedlmayr, introduced me – right from my first semester – to an understanding of science that does not conflict with spirituality or religion. At the time, he was actively involved in a foundation dedicated to fostering dialogue between science, art, and the Christian faith.

Over the past decade, my work has brought me into contact with many people from around the world for whom a productive relationship between science and spirituality is as natural as it is for me. At the same time, particularly in Germany, I repeatedly experience – or hear from others – that openly expressing an interest in spirituality is often met with unease, disapproval, or even open rejection by fellow scientists. Researchers working at this interface are seen as not engaging in “real science”; their work is dismissed as “unscientific” or even “esoteric”.

Such experiences have led me to reflect on my own position on this issue. For instance, I ask myself:

- Is my appreciation of, and interest in, spirituality in any way unscientific or otherwise problematic?
- Are there valid reasons to exclude aspects that typically fall under the domain of spirituality from my scientific work?
- What scientific footing am I standing on when engaging with spiritual perspectives?

Although I no longer conduct fundamental research in physics and have instead turned to research on sustainability and transformation – areas more closely tied to societal issues – I still consider myself a



natural scientist. I studied physics out of fascination and a deep love for the wonder of life and the cosmos. For me, research has always meant the awestruck observation and structured analysis of the laws governing the unknown reality around us. My scientific training has provided me with a steadily expanding toolkit for describing, analysing, and interpreting the processes of reality. I remain enthralled by the fact that scanning tunnelling microscopy once enabled me to observe changes in the electronic states of individual atoms on semiconductor surfaces. I am deeply impressed by the accomplishments of scientific thinking over the past centuries.

At the same time, I cannot ignore three fundamental insights:

1) Other knowledge traditions are valid.

As much as I am a product of scientific thinking, I also recognise that people in other contexts – be they cultural or historical – have developed their own methods of apprehending, understanding, and interpreting the patterns of reality. I would consider myself narrow-minded if my enthusiasm for the scientific methods I know led me to ignore these other approaches. Instead, I strive to meet them with the same curiosity and openness I bring to any scientific inquiry. The transdisciplinary research approach provides a valuable framework for engaging with these knowledge traditions – within and beyond my own culture – on equal terms, enabling mutual learning and the integration of diverse forms of knowledge (Lawrence et al. 2022).

2) As a researcher, I am also a human being – and therefore a seeker of meaning.

I view my research as part of the evolutionary process of life on Earth. Through my work, I hope to contribute meaningfully to that process. Inevitably, this endeavour touches upon questions of deeper significance – questions that lie beyond the scope of what



scientific methods can adequately answer. I could not do my research without a sense of spiritual belonging in this world. In Germany especially, such matters are often considered “personal” or “private”. But for me, the answers I find to these existential questions naturally influence my decisions as a researcher.

In my doctoral research on semiconductor surfaces, such questions may have played a minor role. But in the field of sustainability research, which explicitly engages with the relationship between humans and non-human life, the notion of an “objective” researcher becomes increasingly untenable. The boundary between person and researcher blurs. Rather than deny this interplay, I find it more scientifically responsible to acknowledge and actively reflect on it.

3) Spirituality is a real force in the world.

My research requires me to integrate perspectives that lie outside the familiar canon of scientific knowledge. I am part of an Earth system in the midst of profound transformation, and my research focuses on globally consequential human actions. Within this “human-Earth system”, as Jürgen Renn once described it, people of diverse backgrounds and worldviews act based on more than just scientific evidence. I don’t need to look far to see this. Even here in Germany, many people base their decisions on personal values, fears, and other conscious or unconscious orientations. Spirituality and religion are clearly among the influences that guide human behaviour.

Spirituality is therefore a tangible and effective force within the human-Earth system. If I seek to generate knowledge about the current state of the world, I must be willing to genuinely engage with these perspectives.

These three insights have reinforced my decision to engage with and learn from spiritual traditions – not only privately, but as part of



my professional practice. I do not feel like an outlier in doing so. Around the world, countless researchers work at the intersection of science and spirituality. And, of course, many prominent scientists before me have grappled with spiritual questions. Without going into detail, I would like to briefly name a few figures who – like me – were shaped by a Central European background in physics:

- Isaac Newton (1643–1727) was deeply immersed in alchemical studies and religious texts, intrigued by biblical prophecy and hidden codes in scripture. His spiritual and theological views significantly influenced his work, even if he kept them mostly private.
- Max Planck (1858–1947) was a devout believer who argued that science and religion, far from being in conflict, address different spheres of human understanding. Science reveals the workings of nature; religion addresses meaning and value. For Planck, science was a way to perceive the “divine order” of the universe.
- Albert Einstein (1879–1955) often spoke of a “cosmic religious feeling” – a deep reverence for the harmony and beauty of the cosmos. His famous remark that “God does not play dice with the universe” expressed his belief in an underlying order. He referred to “Spinoza’s God” – a pantheistic view in which God and the universe are one.
- Niels Bohr (1885–1962) was fascinated by the philosophical and spiritual implications of quantum theory. He drew inspiration from Taoism and its concept of complementarity – opposites that exist in harmony.
- Erwin Schrödinger (1887–1961) was deeply influenced by the spiritual philosophies of Hinduism and Buddhism. In *What Is*



Life?, he discussed the unity of consciousness and the illusion of individuality, echoing Vedanta philosophy.

- Werner Heisenberg (1901–1976) saw quantum physics as opening new philosophical dimensions that challenged classical views of space, time, and reality. He was interested in Zen Buddhism and Taoism, which also grapple with uncertainty and emptiness.
- Carl Friedrich von Weizsäcker (1912–2007) viewed science and spirituality as complementary paths to truth. He engaged in interreligious dialogue and sought to unify physics, cosmology, and consciousness in a comprehensive theory.
- Hanns Peter Dürr (1929–2014) saw the universe as a dynamic web of relationships, without a strict division between spirit and matter. He drew heavily on Eastern spiritual traditions and argued for an intuitive, holistic worldview to address global crises.

This list is by no means exhaustive, and many other examples from recent years could be added. While I do not necessarily share all the views or conclusions of these physicists, their examples strengthen my basic conviction: if Planck, Heisenberg, and Schrödinger were able to explore these paths seriously, then I am treading in solid scientific footsteps when I pursue mutual learning between science and spirituality.

Of course, there is much I do not understand about what is called “spiritual”. I am sometimes baffled when scientific findings are misused or oversimplified to support spiritual worldviews. Just as there is pseudo-science and media-hyped scientists who position themselves as “explainers of everything”, there is also pseudo-spirituality, quackery, and dogma. I therefore fully understand



colleagues who view spirituality as vague or meaningless nonsense – just as I understand those spiritually-minded individuals who regard science as cold, detached rationalism. Neither view is accurate. There is a balanced and thoughtful middle ground in both fields.

To be clear: a dialogue between science and spirituality is not needed everywhere. I am not arguing for spirituality, nor do I wish to imply that every scientist must engage with it. For many researchers, it may not be relevant to their work. Still, I believe that the mere mention of the word “spirituality” should not cause scientists to recoil or roll their eyes.

The question is not whether I, as a researcher, agree with the insights of spiritual traditions. The more pertinent question is whether I can learn something from them that is relevant to my research. And here, I am convinced that an exchange between these perspectives leads to valuable insights – not only scientifically, but also in terms of our societal challenges.

Engaging with spiritual or other non-scientific perspectives does not undermine the integrity of our scientific work. On the contrary, I believe I stand in good company with Heisenberg, who once said that truly new territory in science can only be reached if, at a decisive point, one is willing to leave the ground upon which earlier science stood – and, as it were, leap into the void.

Let me conclude by once again quoting Professor Erwin Sedlmayr, whose words have stayed with me ever since my first semester. At the beginning of his introductory lecture, he said: “With me, you will learn a very specific way of approaching the sun and the stars. This method is suited to answering a very specific kind of questions – questions that are linked to a particular aim. But you will also have questions for which this method is not helpful. So please, never lose



the ability to change your perspective and to look at the same sun in a different way.”

This fundamental willingness to adopt new perspectives seems to me a vital asset – both within and beyond the scientific community. In Heisenberg’s time as now, the questions we face are so complex that we need compelling reasons before excluding any perspective from our pursuit of knowledge and solutions. For me, engaging openly and reflectively with spiritual perspectives is essential to my scientific practice. My experience thus far encourages me to continue down this path. I am curious to see where it will lead.

