CHAPTER 4

Physical Science in a Modern Mode

[T]he history of physical science in the twentieth century is one of a progressive emancipation from the purely human angle of vision.

JAMES HOPWOOD JEANS, The New Background of Science (1933), 5

Introduction

The present chapter serves several interrelated purposes. It surveys central developments in the history of the physical sciences (i.e. physics and chemistry) in the period from 1900 to the beginning of World War II in order to provide solid background reference for the rest of the book. The developments that concern us the most fall into three main streams: relativity theory, quantum mechanics, and research on radioactivity. All three fields involve distinctly new conceptual developments, achieving enormous attention and sparking much speculation outside of the physical sciences, addressing broader issues than strictly scientific ones. The primary motivation for providing a relatively comprehensive yet concise historical overview of these scientific developments is the recognition that much history of religion dealing with the impact of science on religious innovation tends to engage only superficially with the history of science.¹ Thus a number of stereotypes, projections, and emic historiographies of science have tended to be reproduced uncritically, while at other times, the lack of a critical interrogation of science itself has left many interesting research questions unanswered. Breaking this problematic trend and grounding the analysis of modern science’s interaction with processes of religious meaning-making in a solid historical basis is a key objective. In combination with the next chapter that focuses on the life and mind sciences, I will here present the scientific “basis” for speculative “superstructures” concerning worldviews and new natural theologies. Those superstructures shall occupy us as length in chapter six, but in order to fully assess their relation to scientific developments, and to differentiate between strategic mythmaking and actual

¹ Cf. Asprem, ‘Dis/Unity of Knowledge’.
scientific practice, it is essential to first establish a close dialogue with the history of modern science.²

To illustrate the need for a closer engagement with the history of science I will begin by looking briefly at three major works in the history of religion that could all have benefitted from it. The first of these is Catherine Albanese’s Republic of Mind and Spirit (2007), a ground-breaking work on what the author calls American “metaphysical religion”. In introducing, very briefly, the emergence and importance of quantum mechanics, Albanese bases her narrative of scientific developments largely on “New Age” classics such as Gary Zukav’s The Dancing Wu-Li Masters and Fritjof Capra’s Tao of Physics, adding primary material from Werner Heisenberg’s later popularising and speculative work.³

As a result we are presented with a history of science narrative that has already been filtered and interpreted through the lens of those who later made strategic use of it. The production of this narrative remains unquestioned. We learn nothing about the relationship between the religious developments in question and the scientific developments they build on, make use of, or respond to, since we are only confronted with the final product. We only get to see the scientific developments through the eyes of the religious entrepreneur. This would never be acceptable to historians of religion if the claims were about other parts of history (e.g. claims of tradition, hagiographies, attribution of authorship to “sacred texts”), and it should not be accepted for claims about the history of science either.

Olav Hammer’s Claiming Knowledge illustrates a quite different problem related to the neglect of engaging with the history of modern science. Hammer’s ground-breaking analysis of the strategic uses of science by esoteric spokespersons in the modern period is built on a helpful definition of “scientism” as the discursive strategy of claiming the authority of science for “non-scientific” systems.⁴ One problem with this definition, however, is that it takes the thoroughly “cooked” claims of science for granted, without interrogating the process of scientific knowledge production itself. In other words, it offers a somewhat simplistic dichotomy between “proper science” and (non- or

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² The approach taken here, in other words, makes a case for the relevance of studying the origin, development and the justification of scientific concepts independently of how these have been deployed in the context of religious meaning making. This approach may fruitfully be compared and contrasted to the more strictly discursive analysis of related material in von Stuckrad, The Scientification of Religion.

³ Albanese, Republic of Mind and Spirit, 397–399, 582 n. 9–10.

⁴ Hammer, Claiming Knowledge, 206.