QUESTIONING SCIENTIFIC FAITH IN THE LATE NINETEENTH CENTURY

by Frederick Gregory

Abstract. The late nineteenth century was not only a time in which religious faith was questioned in light of increasing claims of natural science. It is more accurate to see the familiar Victorian crisis of faith as but one aspect of a larger historical phenomenon, one in which the methods of both religion *and* science came under scrutiny. Among several examinations of the status of scientific knowledge in the waning decades of the century, the treatment of the subject by the German theologian Wilhelm Herrmann and philosopher Hans Vaihinger rejected its objective nature and denied that either scientists or theologians had access to the truth of nature. Although this stance regarding the nature of science, religion, and their relationship was limited to intellectuals in German society at the time, it foreshadowed developments in our own day in which the traditional search for truth has been problematized.

Keywords: correspondence theory of truth; crisis of faith; fictions; Wilhelm Herrmann; hypotheses; irrationality of nature; knowledge as the body's mechanism; metaphysics; *Naturbeherrschung*; objective knowledge; positivism; pragmatism; skepticism; unified worldview; Hans Vaihinger

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Mary Ward's 1888 novel, *Robert Elsmere,* has been regarded as a paradigmatic statement of the Victorian crisis of faith. In it a modern clergyman finds that he can no longer believe in miracles and resorts to establishing a sect whose focus is a mélange of Christianity, positivism, and the social gospel. The novel resonated sufficiently with late nineteenth-century British society that it brought considerable recognition to Ward, enabling her to play an instrumental role in the promotion of unitarian religion. It gave voice to Ward's apparent belief that newly found truths of the modern age,

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including those discovered by the latest natural science, were incompatible with older claims that had once formed essential building blocks of religious doctrine.[1]

To explain why Ward and others on the continent were willing to confront the need to abandon established articles of religious faith, at least in part because of developments in recent science, it would seem reasonable to appeal to a general belief in and an endorsement of the objective nature of scientific results that was being trumpeted by practicing scientists themselves. Dutch physiologist Jakob Moleschott appealed in 1867 to this powerful image of science when he described how scientists discovered laws: "The natural scientist does not give in to the belief that he has created the law. He feels in his innermost being that the facts impose it upon him, and the more he analyzes them the more powerfully he feels their driving necessity" (Moleschott 1867, 8). The end-of-the-century conviction that one was nearing the end of science, that only mopping-up exercises carrying out results to the sixth decimal point were left to science,[2] was another expression of the alleged confidence in its objectivity that had evidently percolated down to at least some levels of popular culture. No wonder the experience of some intellectual leaders of the time led to a mentality of warfare between a progressive, objective scientific camp and a backward-looking, subjective religious community that stubbornly refused to give up a lost cause.

As is now well known, ongoing historical research has led us to question the so-called warfare metaphor as an accurate depiction of the relationship between science and religion at the time, or, if we are not to hypostatize *science* and *religion* into timeless and unchanging abstractions, between people whose first priority was their religious beliefs and those whose main concern was scientific investigation.[3]

Others have considered the broader context of religion and modernity. One look at the pervasive presence and current central role of religion in the cultures of our globe, for example, suggests that, in spite of the recent campaign of such scientists as Richard Dawkins (2006) and Victor Stenger (2007) to use science in support of atheism, Jeffrey Cox has been right to seek a new set of hypotheses to guide our thinking. In a volume devoted to the Victorian crisis of faith edited by Richard J. Helmstadter and Bernard Lightman, Cox observes that an older notion, according to which contemporary humankind is in the midst of a transition from a world in which religion was universally important to one in which it will be universally marginal, simply has not held up. He suggests "that all theories of secularization, even the most sophisticated, are linear models of decline that should be replaced with a model of religion in the modern world that leaves the question of growth and decline open" (Cox 1990, 315).

Rethinking the relationship between science and religion has been going on for some time, with the result that calls to broaden our perspective

similar to that urged by Cox are readily evident. One context in which this has occurred is the Victorian crisis of faith. James Moore argues that it was not merely a crisis "of faith." For "faith," which he regards as synonymous here with belief, "was, as always, the corollary of action, and action based on faith embodied social purpose. Spiritual equipoise, moral rectitude, intellectual integrity—not merely these were at stake, but the very order and progress of society. The Victorian crisis was a crisis of legitimation" (Moore 1990, 153). Lightman agrees that social purpose lay at the heart of the matter.

> The term "Victorian crisis of faith" is a label which covers a rather broad range of experience. The majority of those who questioned the values and norms of the old order, centered on ideas of an agrarian, aristocratic, and conservative Christian society, found solace in the construction of a new intellectual synthesis acceptable to the modern, industrial, scientific, and urban mind. (Lightman 1990, 284)

Sydney Eisen acknowledges in his introduction to the Helmstadter and Lightman book that "the majority of essays in this volume make a compelling case for viewing the crisis of faith as part of a broader social and political context" (Eisen 1990, 3). And yet, for all of the wishes to expand our vision of the crisis of faith, the contributions here and even other considerations of the appearance of agnosticism in the nineteenth century circumscribe their subject in a manner that permits only doubts about *religious* belief to have engendered the crisis.

There is little doubt that for some the era was marked by a loss of confidence in traditional articulations of religious belief. The period is, after all, referred to as the "Age of Realism," a label that suggests humankind was being forced to surrender the biased assumptions of conventional religion because an objective (realistic) view of the world was now possible. But is it not also possible that suspicions of biased assumptions extended beyond their appearance in merely religious form, perhaps even to invade science itself, the supposed bastion of objectivity? If so, ought we to expand our understanding of the crisis of belief to include a loss of scientific as well as religious faith? Historian Paul Croce (1995) has made this case well for William James, who concluded that neither religion nor science could deliver on the certainty each claimed to offer.

There is a third possibility. If some did lose their religious faith and others their faith in science, might it be that for some it was less a matter of loss than a matter of modifying or accommodating[4] their viewpoint about the nature of religious *and* scientific knowledge? This is the possibility explored here, specifically with reference to two thinkers representative of such a trend from the German-speaking world. Both were sons of Protestant clergymen who, in the process of reformulating the religious outlook they inherited from their families into a religious position with which they could be comfortable, also found it necessary to modify their understanding of science. To Wilhelm Herrmann (1846–1922) and Hans Vaihinger

(1852–1933) neither religion nor science could justify the bold confidence some had once placed in religion and others were now placing in science. Herrmann and Vaihinger show us that we must continue to adjust our understanding of the contours of the late nineteenth-century beliefs to include an ever greater variety of responses to the growing inadequacy of long-held convictions.[5]

Wilhelm Herrmann

I have dealt with the life and work of Herrmann more completely elsewhere (Gregory 1992, chaps. 6–7), so my treatment of him here briefly summarizes his stance on the nature of scientific knowledge. Herrmann was a professional theologian who as a youth had become enamored of Kant while yet a student in the Gymnasium. Once in the university, he was stimulated by the works of theologian Albrecht Ritschl, especially his critique of the assumption that theology should not contradict natural reason but use it as a support. Well aware from his study of Kant that reason was limited in what it could deliver, Herrmann warmed to Ritschl's questioning of what he called Platonistic cosmology, the assumption that the acquisition of scientific knowledge would end in a highest law of being from which one could derive knowledge of the world as a whole.

In his first publication of 1876, *Metaphysics in Theology*, Herrmann argued that it was a mistake for theology to make itself dependent on metaphysics; that is, theologians should not assume that to possess the proper contents of Christianity they must make sure that they acquire a unified view of the world. Swirling all around the citizens of the late nineteenth century were new assertions about a unified new worldview based on natural science, so such a claim seemed out of sync with the spirit of the times. More and more science was forcing its way into the public sphere. Charles Darwin, of course, simply could not be ignored, and neither could the claims of scientific materialists with their antireligious message (Gregory 1977). Behind these radical symbols of the scientific age, however, were the achievements of scientists such as Lord Kelvin in Britain, Hermann von Helmholtz in Germany, and Louis Pasteur in France, each of whom drew considerable attention to the power of science. Natural science appeared to be offering unquestionable support to the idea that the scientists were closing in on nature's truth and that theologians had better sit up and take notice if they wished to remain relevant to modern life.

But it was just this unified worldview of natural science that Herrmann opposed. In fact, he chided theologians for taking heart from those scientists who presumed to articulate a scientific worldview.

> [Modern theologians] have colleagues in their work in some enthusiastic representatives of natural science, who, unsatisfied with their intercourse with individuated existence, raise themselves from the basis of empirical investigation to the idea of a world whole and a unified ground of things. This cooperation per-

mits theological speculation to hope that it will, *with such help*, be able to reach the rock bottom of reality and to uncover the secret of the unified gigantic construct of the universe. (Herrmann 1876, 2; emphasis added)

One theologian, Herrmann reported, responded to the question of why the Protestant Union had not created a new confession by saying that natural science and philosophy had not yet brought their enterprise to a conclusion, as if theologians had to wait for science and philosophy to finish their work (Herrmann 1879, 97, 99).

As a student of Kant and Ritschl Herrmann had come to believe that one could never acquire the correct unified worldview imagined by such folks; indeed, he believed that the limitations of knowledge were easier to see in natural science, where practical concerns clearly outweighed philosophical rigor, than they were in theology. Referring to the concept of the atom, Herrmann noted that scientists did not bother their heads about accusations from metaphysicians that such ideas were self-contradictory where claims of actual existence were concerned. They simply called them "fictions of undoubted practical success" and continued to use them (Herrmann 1876, 5–7).

Herrmann's first book, however, was addressed to theologians, not scientists. He wanted them to realize that they should not succumb to the temptation to seek "the rock bottom of reality" but should rather focus on the proper concern of religion and theology—morality. "Every religious worldview is an answer to the question: how is the world to be judged if there really is to be a highest good?" (Herrmann 1876, 8)

It was in his second book that Herrmann took on the task of exposing the provisional nature of scientific knowledge. *Religion in Relation to Knowledge of the World* (1879) equated natural science with *Naturbeherrschung*, mastery of the world. Any manipulation of scientific concepts for other than strictly practical reasons fell under the category of metaphysics in his view because it presumed to provide knowledge of a higher order not accessible through empirical investigation. He referred frequently to the almost irresistible urge to "complete" knowledge of phenomenal objects by uniting them into a comprehensive system. That was metaphysics. He was not opposed to metaphysical speculation as long as one realized that by engaging in it one imparted a "characteristic coloring" to the conceptual apparatus of natural science. In spite of what some natural scientists might want one to believe, grandiose articulations of scientific materialism or scientific naturalism (metaphysics) must not be understood as a real completion of the limited scientific knowledge of the world (Herrmann 1879, 70–71).

Although Herrmann's message was aimed at theologians, its presence in the waning decades of the nineteenth century reveals that not all thinkers saw themselves as participants in a crisis of faith precipitated by natural science. For Herrmann it was more a case of a crisis for both theology and

science. Practitioners from both areas had to realize, according to Herrmann, that there was no objective comprehensive view of reality and they had to adjust their understanding of their goals accordingly. Herrmann hardly saw himself as a theologian engaged in battle with natural scientists; indeed, he urged that theologians surrender all authority in pronouncements about nature *to* scientists, who, in their practical attempts to control nature, must remain free from interference. Science and religion could not conflict because there was no overlap between them.

Hans Vaihinger

If Herrmann proclaimed to his age that reason could not deliver an objective view of reality, a second figure from the same period came at the same issue from a different direction. Vaihinger began with the conviction that nature and history were *irrational* and that this fact forces us to surrender an old-fashioned faith in science.

Born into the home of a South German Lutheran pastor in 1852, Vaihinger gradually expanded his horizons until by age 16 they had, in his words, "gradually and imperceptibly evolved into pantheism, based on a deep love of nature" (Ogden 1966, xxiii). Although by age 14 he had come to doubt the stories of the New Testament, he gives no evidence that natural science was in any way responsible. It was, for example, Johann Herder's book on the history of humankind from which Vaihinger learned to make evolution one of the fundamental tenets of his mental outlook. When, subsequently, a schoolmate told him about Darwin's new theory of evolution, "it came as no surprise to me because through my reading of Herder I was already familiar with the idea" (Ogden 1966, xxiv).

Vaihinger entered Tübingen to study theology in the fall of 1870, just after France's armies surrendered to what was shortly to become the newly unified German Reich. Three years later he switched over to the philosophy faculty and embarked on a study of the classics (Kowalewski 1935, 6–8). Kant stood out from all the others, not only because Vaihinger found himself drawn to Kant's warnings about the limits of knowledge but even more because of something else in Kant that appealed to his "innermost being." This was Kant's notion "that action, the practical, must take first place, in other words the so-called supremacy of practical reason" (Ogden 1966, xxviii).

From then on Vaihinger could never again be satisfied by any scheme that presumed to explain everything rationally. Systems like those of Johann Fichte, Friedrich Schelling, and Georg Hegel did not permit one to appreciate the element of irrationality that Vaihinger recognized to be an essential aspect of nature as well as history, although he conceded that there was something attractive about Fichte's recognition of the power of the will that was detectable in the mind's ability to subdue even material reality.

His own explanation of why irrationality became so important to him, of why he delighted in Arthur Schopenhauer's and Friedrich Nietzsche's celebration of irrationality when he encountered them, is very personal. It was the contradiction between his natural inclination to be energetic, to engage in all kinds of physical activity, and his inability to perform such actions because of his extremely poor eyesight. "This glaring contrast between my physical constitution and temperament has always struck me as absolutely irrational, and it has sharpened my senses to notice all other irrational aspects of my existence" (Ogden 1966, xxix).

Impressed by the new results of natural science ever more in evidence in the late nineteenth century, the young Vaihinger sought contact with scientists and read widely in many scientific fields. In conversation with a physiologist about vital force, which Vaihinger dogmatically denounced at the time as antiquated, he received a reply that contributed to the eventual honing of his view of rational thought in general and of scientific theory in particular: Vital force may be regarded as false or at least not theoretically justified, said the physiologist, but because it could be shown to be expedient on practical grounds it might be seen as not only permissible but even necessary (Ogden 1966, xxxii). Vaihinger began to realize that his certainty about the inadequacy of the idea of vital force was based on an assumption that natural science could not tolerate conclusions that were illogical. But why should science escape irrational manipulation of thought by the will?

In the early 1870s Vaihinger began to associate Schopenhauer's proto-pragmatism—in which thought, because it originates in the service of the will, only gradually becomes an end in itself—with Kant's claim that thought is bound by limits and that metaphysical knowledge is impossible. The result, evident in the manuscript he wrote later in 1876, was a view of the human rational capacity that emphasized its ability to deliver results desired by the will over understanding sought by the mind. Because the mind has as its chief function to assist in the preservation of the life of the organism, Vaihinger concluded that all thought processes and thought constructs were essentially biological phenomena, not rationalistic (Vaihinger [1911] 1986, 6).[6] Knowledge was only a secondary and incidental motive, a mechanism employed by an unconscious and largely instinctive purposeful activity of the mind in service of the body ([1911] 1986, 7, 10; [1911] 1966, 5, 7).

Vaihinger finished at Tübingen in 1874. He went to Leipzig, where he became acquainted with several enthusiasts for the psychology of Johann Herbart. There he also encountered several stimuli that carried him along in the same direction he had been going. Most significant was the writing of Friedrich Albert Lange, author of *The History of Materialism* ([1866] 1877) and regarded by many as an initiator of the neo-Kantian revival of the second half of the century (Zweig 1967, IV, 383; Stack 1998, V, 353).

In the course of giving lectures to The Academic Philosophical Society in Leipzig Vaihinger met Richard Avenarius, the society's founder and positivist critic of Kant. The second autumn of his stay in Leipzig brought Wilhelm Wundt, and a semester in Berlin brought him into contact with Helmholtz, who inspired him to learn on his own a great deal about mathematics, natural science, and also the history of these disciplines (Kowalewski 1935, 10–11).

Near the end of 1876 Vaihinger completed a manuscript that would form the larger part of the book he would publish three decades later. The manuscript was deposited as an inaugural dissertation with the faculty of the University of Leipzig in February of 1877 to earn for Vaihinger the right to lecture, but it appeared only in 1911 under the title *The Philosophy of "As If."* In a general introductory section Vaihinger unpacked the implications of his belief that the mind exists primarily to serve the human organism's will. When the mind consciously and deliberately utilizes rational and logical capacities, thought can become an end in itself; it may, in terms borrowed from Schopenhauer and his predecessor Herbart, become "the parasite of the body." The mind in this mode may think of itself as engaged in the task of coming to know reality objectively. But Vaihinger's conviction that there was an essentially irrational dimension in nature and history ruled this out as a real possibility. "Whatever objective reality may be, one thing can be stated with certainty—it does *not* consist of logical functions, as Hegel thought" (Vaihinger [1911] 1986, 10; [1911] 1966, 8).[7] Vaihinger explicitly rejected the correspondence theory of truth, the notion that thought processes can be taken "for copies of reality itself," as the source of "the greatest and most important human errors" ([1911] 1986, 11–12; [1911] 1966, 8). The best one can obtain is that combinations of ideas fulfill their purpose. "From the standpoint of modern epistemology we can no longer talk about 'truth' at all, in the usual sense of the term" ([1911] 1986, 5; [1911] 1966, 4).

In Part I, the section written in 1876 titled "Basic Principles" and unchanged later in the first edition of the published book, Vaihinger reiterated that the object of the world of ideas was not the portrayal of the real world, an impossible task, but "to provide us with an instrument to find our way about the world more easily." There was no possibility that our mental constructs are direct reflections of reality, even though our natural tendency is to compare them with reality and adjust them as needed until they seem to mirror nature consistently. But Vaihinger did comment on various features of the mind's technical thought processes; for example, rules of thought, such as those present in logical rules like induction, summarize agreed-upon manipulations of mental constructs. A particular kind of mental structure that the mind produces out of itself to assist it in responding to a hostile world is the fiction, an artificially created device that cannot correspond to the real world directly but that the mind employs

anyway as long as it serves a useful function for us ([1911] 1986, 18f.; [1911] 1966, 12–13). Fictions are then consciously false assumptions.

In his exposition of the consequences of his approach for the theory of knowledge, Vaihinger spelled this out clearly.

> The psyche works over the material presented to it by the sensation. . . . It sifts the sensations, on the one hand cutting away definite portions of the given sensory material, in conformity with the logical functions, and on the other making subjective additions to what is immediately given—and it is in these very operations that the process of acquiring knowledge consists—and it is all the while departing from reality as given to it. ([1911] 1986, 287; [1911] 1966, 157)

In the end Vaihinger was still very much a product of the nineteenth century. He envisioned nature as a realm governed by "grandiose and powerful agencies of the real world which operate and work under the dictates of a hard and clumsy necessity" ([1911] 1986, 293; [1911] 1966, 161). It is the mind that reacts to these dictates by establishing logical functions that "falsify" reality to the practical advantage of the organism. The falsification process, however, involves a process of negotiation with reality between our own inner world and the external world. There are then exchange centers, where the values of one world are changed into those of the other and the active intercourse between both worlds is made possible, where the light paper currency of thought is exchanged for the heavy coin of reality, and where on the other hand the heavy metal of reality is exchanged for a lighter currency that nevertheless facilitates intercourse ([1911] 1986, 291; [1911] 1966, 160).

Another indication of Vaihinger's nineteenth-century mentality emerges in the distinction he wished to draw between fictions and hypotheses. Fictions are purely practical devices that drop from view once their use has been realized. They are never intended to serve as a claim that they actually represent reality. Vaihinger's favorite example here is Goethe's notion of an animal archetype, which, in Vaihinger's view, was not introduced as a claim that it could ever be perceived or ever actually existed. Goethe's purpose was to assert that all animals could be regarded *as if* they were modifications of an archetype in order to introduce a new heuristic classification of animal forms that in Goethe's view was useful ([1911] 1986, 145; [1911] 1966, 86). Hypotheses, however, do wish to be taken as an expression of reality. That is, one harbors the hope that, although not yet established, an hypothesis will someday be proven true. When Darwin asserted that humans are descended from the lower mammals, writes Vaihinger, he envisioned the actual existence of direct and indirect ancestors. Unless the reader remembered Vaihinger's warning that we have to surrender "truth" in the normal sense, his reference to the hope that a hypothesis will one day be proven true was confusing, as was his reference to the Darwinian theory as "the correct view" in comparison to Goethe's heuristic fiction and his observation that the function of an hypothesis was "only provisional" because

the goal was for it to "become fully qualified for admission into the circle of what is accepted as real" ([1911] 1986, 143–47, 603–12; [1911] 1966, 85–87, 266–70).

The bulk of Part I was spent in an analysis of fictions. He began by introducing the many kinds of fictions that the mind employs, many of which were used in fields other than natural science. Vaihinger cited analogical fictions employed in theology and jurisprudence and practical fictions useful in ethics. Among the numerous examples from natural science and mathematics were the notion of empty space, n-dimensional space, the concept of infinity, and the atom. The remainder of the original manuscript was devoted to examining patterns that have emerged in the way fictions have been used (on the way to forming a theory of fictions), to demonstrating the presence of fictions in the history of (Western) human thought, and to summarizing the general consequences for the theory of knowledge.

In 1877 Vaihinger regarded the work as in need of much expansion. But because the death of his father left him on his own and because his new duties as a professor in Strasbourg took considerable time, he was distracted from the work by a more lucrative research opportunity from a publisher to produce a commentary on Kant's *Critique* in time for the centenary of its publication some four years hence.[8] This brought him a call to Halle in 1884, although he did not receive a fully regular professorial appointment there until 1894, after the second volume of the commentary was published. He stepped down from the position in 1906 because of badly failing eyesight, although he retained his position as editor of the journal *Kant Studien*, which he had founded in 1896.[9]

It was after his retirement from his professorship that he returned to his earlier project. His struggles with vision meant that adding two new major sections to the original manuscript would take five years. These later sections are devoted to further amplification of the role of fictions through a host of new illustrations, many drawn from mathematics and physics and others taken from historical systems of thought. He also added a special section on the systems of Kant and Nietzsche in light of his unique interpretation of their significance.

Vaihinger felt that had he published in 1877 his work would not have been as effective as it had a chance to be in 1911. He cited four moments subsequent to the 1870s that helped smooth the way for his book. First was the voluntarism of the 1880s and 1890s, by which he meant the work of Friedrich Paulsen and Wundt. In the 1870s, he noted, he stood alone in his admiration for Fichte and Schopenhauer, but that had changed. He noted that it was in part due to Darwin, after whom the primacy of the will and, he added in a play on words, also the will of the primates (*der Primat des Willens und auch der Wille der Primaten*) was widely acknowledged ([1911] 1986, xxvi). Next was the contributions to epistemology of

Ernst Mach and Avenarius from the 1880s, in particular Mach's analysis of knowledge as an economical representation of the material of sensation in the service of life. Third was the triumph that Nietzsche's work began to enjoy in the 1890s. Although the notion that understanding required the employment of deliberately false but necessary ideas was but one of the many tones of his polyphonous nature, one could still find it in his works. Finally, there was the emergence of pragmatism, especially as seen in James's battle against a one-sided intellectualism and rationalism that permits isolated thinking alone to have value and truth, and in the thought of Charles Saunders Peirce, "the real father of pragmatism," who as early as 1878 may well have had in mind that there are ideas we recognize immediately to be false but which are justified and can be seen as true practically because they render service for us ([1911] 1986, xxvi–xxvii).[10]

Vaihinger was convinced that for too long Germans had been presented with a choice between two options that were in his mind falsely regarded as mutually exclusive. Germans were forced to choose to follow either some form of their own idealistic heritage or the largely foreign import known as positivism. The idea that the formal articulations of our intellect are the end products of a heritage originating in the will presented Vaihinger with what he regarded as a way out of having to choose between idealism and positivism. Try as he might, however, Vaihinger was repeatedly having to defend himself against labels others placed on him and his thought.

The Philosophy of "As If," for example, was attacked as skepticism and atheism. It was not skepticism, he replied. His philosophy did not doubt the existence of the real world or question reality. He conceded that it was positivism in the sense that it acknowledged sensations as the beginning point, but it could not be skepticism because it did not hold these basics to be problematic in any way (Vaihinger 1921, 532–33). Further, skepticism loved to speak of the limits of knowledge, by which it meant that human knowledge was inferior to a higher or divine knowledge because the limits it must use to assess nature were, from the vantage point of that higher wisdom, artificial (*künstlich*). But, wrote Vaihinger, his philosophy never spoke of limits in this sense; hence in his mind there was no higher wisdom over against a lower, human wisdom. There was only one way to know, to compare the unknown to the known, a process that ended when the known to which one compared the unknown was no longer reducible. That was the case when one arrived at sensations, which remained the foundation on which all knowledge was based, be it human or divine. This was not skepticism but positivism (1921, 534–35).

One sees that Vaihinger's approach ruled out an older form of the crisis of faith, because it was not a matter of losing a relationship with the divine that one once had but realizing that one never had it in the first place. Naturally, this did not satisfy others of his time. Hugo Bund, for example, in a book that denigrated Kant's philosophy as "Jesuitism," attacked

Vaihinger's analysis of Kant and his *Philosophy of "As If"* as a great danger to religion. Vaihinger characterized this attack as a renewal of the old sensationalized accusation of atheism that more than a century earlier had been directed against Fichte in Jena. His reply to Bund indicated how he saw the relationship between his system and religion:

> The "as if" way of thinking does not change theoretical, ethical, and religious ideas into empty fancies; on the contrary, it confirms their usefulness, their indispensability, and yes their necessity in the strongest measure conceivable and, by emphasizing exclusively their practical value, makes them thereby independent from all metaphysical speculation. While many theological voices regard the *Philosophy of As If* as a fellow traveler against materialism and its tedious and prosaic and philistine devaluation of the worth of religious ideas, Herr Hugo Bund sees a great danger for religion in the Kantian as if. (Vaihinger 1917, 9)

Of course, Vaihinger's pragmatic defense of religious ideas was equivalent, for many of his time, to an acknowledgment of their falsity. But that was for those who, in Herrmann's view, insisted that religion had to harmonize scientific and religious worldviews into one comprehensive truth. And one need not be a conservative theologian to raise an objection to the pragmatic strain in Herrmann and Vaihinger. The liberal theologian Otto Pfleiderer objected that theology had to rest "on the firm ground of objective being." He bristled at Herrmann's declaration that the truly real in Christianity was "something totally different from [what it means] in metaphysics." "What kind of genuinely reasonable response are we to make to that? Is there something else outside the truly real than the not truly real? . . . As there is but one reason, so there is but one truth, but one world of the real . . . which together constitutes the entire one reality, the object of reasonable thought" (Pfleiderer 1877, 487–88).

Here was a theologian who was trying to head off a crisis of faith in our ability to know reality. If such a view were adopted, there was no criterion of truth other than, as Pfleiderer put it, "trust in the superficial testimony of human authority." And that, he thought, was simple dogmatism (1877, 491).

The crisis at the end of the nineteenth century extended well beyond the one celebrated in *Robert Elsmere*. It is more accurate to see the familiar Victorian crisis of faith as but one aspect of a much larger historical phenomenon, one in which the methods of both religion and science came under scrutiny. In the outlooks of Herrmann and Vaihinger, theologians and scientists shared a similar fate. Neither could (or should) aspire to unified knowledge of the world, because that endeavor took each beyond its proper sphere—morality for religion and practical control of nature for science. In its own way this conclusion foreshadowed developments a century hence, when late–twentieth-century scientists and people of faith, unaware of or rejecting the antirealist position of Herrmann and Vaihinger,

found themselves on the same side of the postmodern divide, joined in their opposition to those who would question the search for truth itself.

NOTES

1. For an excellent discussion of *Robert Elsmere* in the context of the Victorian crisis of faith see Lightman 1990.
2. See A. A. Michelson's 1894 citation of "an eminent physicist" who had declared that "the future truths of physical science are to be looked for in the sixth place of decimals" in Badash 1972, 52.
3. I agree with Andrew Cunningham that where the engagement of "science" and "religion" is concerned these terms mean whatever their respective practitioners at a given time say they mean (Cunningham 1988, 370, 381–82).
4. I borrow this term from the subtitle of Ueli Hasler's *Nature Mastered: The accommodation of theology to a middle class conception of nature in the nineteenth century* (1982).
5. Although both Herrmann and Vaihinger are associated with the neo-Kantian movement of the latter half of the nineteenth century, not all who forsook older understandings of both religion *and* science were. One thinks, for example, of Ernst Mach, Friedrich Nietzsche, Pierre Duhem, and others whose thought involves a reexamination of both traditional science and religion.
6. The English translation was first published in 1924, and reprinted in a second edition later. See Vaihinger [1911] 1966, 4; cf. Ogden 1966, xlvi.
7. Vaihinger used different adjectives to distinguish unconscious organic (purposeful—*zwecktätig*) thought from conscious (technical—*kunstmässig*) thought ([1911] 1986, 13; [1911] 1966, 9).
8. Vaihinger rehearsed the reasons why he delayed publishing his book in the Preface to its second edition of 1913 and also in a reply to criticisms for delaying it in an article in *Kant-Studien* from 1917 ([1911] 1986, viii ff.; 1917, 18–19).
9. Vaihinger tired of the rivalries among Kant scholars and neo-Kantian schools at the end of the nineteenth century and founded his new journal in an attempt to remain free of such infighting (Vaihinger 1917, 23). After 1903 he took on a coeditor in order to lighten his own duties, which he did increasingly until he stepped down from editing in 1923. Walter Del-Negro has contrasted Vaihinger's work on Kant to another great Kant scholar of the late nineteenth century, Hermann Cohen. Vaihinger followed all the lines of development in Kant wherever they took him, not shying away from dissonance when he uncovered it. Cohen chose the most important line and, neglecting all others, exhaustively investigated its implications (Del-Negro 1934, 317).
10. Although Vaihinger did not list Herrmann or Ritschl among the factors that helped make the time right for his philosophy, Antonio Aliotta (1925) did include their work along with James's pragmatism when listing causes of the undermining of mechanistic science.

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