Modern Intellectual History, 6, 3 (2009), pp. 611–625 © Cambridge University Press 2009
doi:10.1017/S1479244309990205

WHAT THE OCCULT REVEALS

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John Warne Monroe, *Laboratories of Faith: Mesmerism, Spiritism, and Occultism in Modern France* (Ithaca: Cornell University Press, 2008)

Mark S. Morrisson, *Modern Alchemy: Occultism and the Emergence of Atomic Theory* (Oxford: Oxford University Press, 2007)

Where does occultism fit on the map of modernity? Frank Miller Turner proposed an intriguing answer in his 1974 study *Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian England*. The book examined the lives and struggles of six Victorian men: the philosophers Henry Sidgwick and James Ward, the scientists Alfred Russel Wallace and George John Romanes, and the writers Frederic W. H. Myers and Samuel Butler. Of the six, three cultivated a serious and sustained interest in the occult. Sidgwick and Myers engaged in psychical research, while Wallace immersed himself in phrenology and spiritualism. Raised as Christians, all of them came to find Christian belief inadequate. Yet the scientific naturalism that might have provided an alternative pole for their allegiance, that *was* the alternative pole of allegiance for much of their generation, failed to entice them. All had ethical qualms about its refusal to comment on God's existence or on life after death. All, too, wondered about the soul and bemoaned the reluctance of scientists to investigate the immaterial and subjective aspects of human nature. Caught between the Christianity of their upbringing and the scientific naturalism of their adulthood, Turner argued, these men "came to dwell between the science that beckoned them and the religion they had forsaken."[1]

There is much to recommend this way of framing occultism. Perhaps most importantly, it explains why otherwise respectable intellectuals found the occult compelling. Wallace, for instance, hit on the mechanism of natural selection to explain the evolution of living forms and was hailed, along with Charles Darwin,

[1] Frank Miller Turner, *Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian England* (New Haven: Yale University Press, 1974), 1.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

for this achievement in 1859. But in the following decades he became convinced that natural selection could not explain the moral and mental aspects of human nature adequately. Repelled by Protestantism and its doctrine of predestination, yet too concerned with human moral progress to embrace scientific naturalism, Wallace turned to spiritualist investigations to fill the gap. In Turner's hands, Wallace's occultism emerges as a perfectly rational, albeit marginal, alternative to orthodox religion and orthodox science.

And therein lies a problem. As scholars working after Turner have discovered, the occult has been anything but marginal in modern times.[2] The fragmented and multileveled consciousness that we now take as a given, for instance, was first glimpsed at sittings with spiritualist mediums. The abstract art that epitomizes the revolutionary aesthetic of modernity, similarly, came from a deep engagement with Theosophy and its techniques for accessing the occult world beyond the five senses. Organic agriculture, to give one last example, has deep roots in Anthroposophical practice and its astrological understanding of soil, composting, and the cosmos. When we eat organic arugula, we partake of the occult. The occult is everywhere in modernity, in short, yet we have trouble seeing it.

As the two books under review here suggest, our blind spot has less to do with occultism than with our tendency to define science and religion too narrowly. Science does not belong only to scientists, after all, just as religion does not belong only to Christians, Jews, or Muslims. When we assume that they do, a variety of popular movements and practices, including occult ones, become dead-end detours from the history of science or short-lived sectarian off-shoots from the history of religion. They become, in a word, marginal. What the occult reveals, thus, is the inadequacy of our categories of historical analysis and the pressing need to rethink the map of modernity to incorporate occultism in a more positive sense. Where, then, does the occult fit?

LABORATORIES OF FAITH

For John Warne Monroe, the occult belongs primarily to the world of heterodox religiosity. In his excellent book *Laboratories of Faith: Mesmerism, Spiritism, and Occultism in Modern France*, he argues that French religious seekers faced a "crisis of factuality" that occult practice helped them solve. Drawing on

[2] The core belief of modern occultism is that there is a hidden reality beyond the reach of the five senses that can nonetheless be accessed and studied through special individuals (mediums, psychics, magicians, and so on). For two overviews of recent works see Michael Saler, "Modernity and Enchantment: A Historiographic Review," *American Historical Review* (June 2006), 692–716; and Thomas Laqueur, "Why the Margins Matter: Occultism and the Making of Modernity," *Modern Intellectual History* (2006), 111–35.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

the work of cultural anthropologist Clifford Geertz, Monroe notes that in order to function properly, religions must create "auras of factuality" (e.g. through rituals, arguments, and institutional structures) that ground believers' faith. "Auras of factuality" are, of course, historically contingent and one of the great virtues of Monroe's book is to expose the changing nature of religious factuality in nineteenth-century France, as well as the epistemological and political issues at stake in that transformation.

What made knowledge valid in this age was a basis in facts accumulated through empirical investigation. In this context, traditional Christian faith looked increasingly inadequate and there was no shortage of calls for France to liberate itself, finally, from Catholicism. Comtean positivists, for instance, argued that human history entailed gradually leaving subjective forms of knowledge such as religion behind while slowly advancing towards a social and epistemological order based on facts. Over the course of the nineteenth century, moreover, this positivist critique of Christianity acquired a political dimension. As the Catholic Church resisted relinquishing its moral and political voice, supporters of democracy and reform used Comtean positivism to argue for secular republicanism. In this face-off between secular positivists and Catholic conservatives, what were French religious seekers to do? They could abandon faith and embrace secular republicanism. They could stay with Catholicism and leave the crisis of factuality unsolved. Or they could try to reframe religion to create a new metaphysics grounded in empirical experience. French occultists boldly embraced the third option, Monroe argues, to create movements that were "laboratories of faith." In the process, they transformed French religious practice towards individualism and heterodoxy, and thus acted as the vanguard of France's variegated religious life today.

The book develops this ambitious thesis by focusing primarily on one movement: French Spiritism. Five chapters trace its emergence from the clash of mesmerism and American spiritualism at mid-century (chapters 1 and 2), its heyday in the 1860s and 1870s (chapters 3 and 4), and its receding importance from the 1880s onwards as heterodox religious groups espousing a variety of occult creeds proliferated (chapter 5 and epilogue).

The intellectual, social, and political stakes of nineteenth-century French occultism were already clear in the response to American spiritualism, which first arrived in France in 1853. Spiritualist seances were both engaging and worrisome occasions. Participants sat in a darkened family room holding hands around a table. The key participant was the medium, a gifted intermediary who served as a bridge between the world of the living and the world of the dead. After waiting several minutes or even hours, mysterious occurrences would begin: alphabetic raps might sound (raps that spelled out words or phrases), the medium's hand might write messages, and the table might move or even levitate. For believers, the motive cause was spirits who used mediums as their instruments

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

of communication. For nonbelievers the phenomena were more difficult to interpret, yet their discussion presented unique opportunities to pursue other agendas. Journalists, for instance, gave extensive coverage to spiritualism because it was something innocuous to write about in the politically repressive years after the fall of the Second Republic. For their part, Catholic commentators initially saw Satan at work in the seance room, then came to fear that spiritualists were both morally bankrupt and politically revolutionary. Scientists took a reasoned approach to the phenomena, trying to explain them initially through participants' muscle tremors before shifting to an emphasis on mental states. Perhaps the most interesting response came from embattled leftists, men like Victor Hugo and Victor Hennequin, who embraced the turning tables as a source of consolation and inspiration during a period when democracy and social reform were blocked.

American spiritualism put a fifth group, French mesmerists, in a difficult quandary. Cracks had already opened between therapeutic mesmerists, who saw themselves primarily as healers, and more metaphysically inclined mesmerists, who believed in the existence of otherworldly entities. Although the two factions had managed to coexist under the same umbrella since the late eighteenth century, the arrival of American spiritualism split the movement in two. Therapeutic mesmerists took a dim view of spiritualist seances, fearing that any mixing with spiritualism would prevent mesmeric practice from proving its scientific worth and thus receiving the academic recognition it deserved. Spiritualist mesmerists felt the same pressure to conform to factual standards but took a different view: the spiritualist seance, they hoped, would give empirical evidence to back up their claim that otherworldly entities existed (the so-called "spirit hypothesis"). They were fighting, moreover, a rearguard action against the authority claimed by scientists to be the final arbiters of what counted as true and real. As one of them put it in 1854,

> *MM. les académiciens* are the gravediggers of all moral truths; they have led doubt into the strongest souls—everywhere the sweet hope of an afterlife has ceased to exist. Religion is dead, man a mere animal powered by a type of electricity; our fathers' belief in the hereafter is passed off as a dream; strength today lies in the negation of all that is true and will be so eternally. We walk in darkness—what use are these marvels of industry, these fertile discoveries in the arts or sciences.[3]

The definitive break came in 1859, when a committee of eight *magnétiseurs* completed a study of spiritualist mediums and split six to two in favor of the view that seance phenomena were insufficient proof of the spirit hypothesis. Disgusted, spiritualist mesmerists invested ever more heavily in a new movement

[3] John Warne Monroe, *Laboratories of Faith: Mesmerism, Spiritism, and Occultism in Modern France* (Ithaca, NY: Cornell University Press, 2008), 79.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

that took spiritualist phenomena seriously and used them to address the crisis of factuality cogently.

That movement, of course, was French Spiritism, which emerged in the 1860s under the leadership of Allan Kardec. Spiritists shared with spiritualists the conviction that the living could contact the souls of the dead directly, but their style was different. Spiritualist seances were held in an intimate and potentially flirtatious atmosphere of close physical contact between men and women. Spiritist seances, in contrast, were sober and formal affairs dominated by men who observed strict rules of order. Spiritualist mediums, moreover, espoused an exuberantly eclectic variety of visions, often in a highly flowery language.[4] Spiritist mediums, in contrast, subordinated their personality to reveal a unified doctrine emphasizing the importance of charity and fraternal impulses in human affairs. Spiritism took spiritualist mediums, followers, and phenomena, in short, and disciplined them. Why was this brand of nineteenth-century French occultism so successful? One of the major achievements of Monroe's book is to provide a sustained and reasoned answer to that question by looking at the life and times of Allan Kardec.

Born Hippolyte Rivail to a middle-class family in 1804, Kardec's exposure to Romantic reform currents in Europe began early. His family sent him to attend Pestalozzi's academy in Switzerland and Rivail's first ventures as an adult all involved popular education initiatives in the Pestalozzi style. When he first encountered spiritualism in 1855, indeed, he brought that same style to the seance room. Convinced of the spirit hypothesis yet appalled by the slipshod way in which spiritualist circles were run, he used his training in Pestallozi's experimental method to make the seances more rigorous. Each week, he showed up with a series of organized questions designed to elicit clear communications from the seance spirit about "the nature of the invisible world." The results of these investigations were then published as *The Book of Spirits* (1857), the founding document of French Spiritism.[5]

Kardec's doctrine was an innovative and comforting amalgam of spiritualism (the spirit hypothesis without all the visionary excess of ungoverned mediumship) and progressive thought (socialism without its revolutionary thrust). Souls

[4] Spiritualists were used to hearing communications like this one, in which the spirit of Balzac spoke: "Only one more thing for this evening: a trifle! A single petal from each flower you have loved, a single drop among the thousand drops of perfumed dew, pearls of the dawn, that adorn such flowers at break of day! A trifle, a breath to awake the insect asleep in his blossom; a sigh and all it can do to silence and forget the song of a bird; a faint murmur in the foliage—joyous and hidden frolics of happy sylphs—a shepherd's song heard and understood in a poetic sense." Ibid., 103.

[5] Ibid., 100.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

perfected themselves in the material world by going through cycles of reincarnation. The poor suffered more because of what they had done in a previous life. Social inequality was thus an inescapable facet of life on earth, but this did not mean that selfishness should rule. Selfishness, the spirits preached, lay at the root of all evil and was the cause of human suffering. Morality should be based on charity: the rich should voluntarily give to the poor, who should gratefully accept this charity in the hopes of a better life to come. With its nod to reincarnation, its emphasis on charity, and its promise of human moral progress, Kardec's doctrine borrowed heavily from French socialist thinkers such as Charles Fourier, Jean Reynaud, Etienne Cabet, Pierre Leroux, and Henri de Saint-Simon. Despite this debt to Romantic socialism, however, Kardec's doctrine was reformist rather than revolutionary. Whereas Fourier had always aimed to reorganize society to create an egalitarian paradise on earth, for instance, Kardec's doctrine accepted social inequality as a fact of life and pushed off the possibility of paradise to an indeterminate future. Nonetheless, Kardec and his followers believed that the Spiritist doctrine was factual in a way that Catholic theology had never been: spirits offered eyewitness accounts, via the medium, of the other world and thus concrete evidence that there was an afterlife whose logic should also govern the moral order of the living.

Kardec's entrepreneurialism also extended to organizational issues. He founded the highly successful *Revue spirite* in 1858, for instance, and this quickly became the leading occult journal in France. Readers liked its balance between short, entertaining pieces and longer philosophical articles. He also established a series of Spiritist societies beginning in 1858. Members had to be "serious people," preferably "men made eminent by their knowledge and social position."[6] Finally, Kardec published a second book in 1861, *The Book of Mediums*, which gave clear rules for evaluating spirit communications and running seances. At every meeting of a Spiritist society, members had to declare allegiance to Kardec's doctrine by reading aloud from one of his books. Perhaps most importantly for enforcing discipline, the chair of the society decided which spirit to invoke and which questions to ask as well as which communications were authentic and which were not.

Believers testified enthusiastically to Spiritism's beneficial effects and factuality. Consolation for the loss of family members was a common theme, as in this exchange between a living mother and her deceased daughter, Julie:

JULIE: I no longer have the body that made me suffer so, but I have the same appearance . . .

THE MOTHER: If I saw you I'd recognize you, then!

[6] Ibid., 115.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

JULIE: Yes, certainly, and you have already seen me often in your dreams.
THE MOTHER: I *have* seen you in my dreams, but I thought it was a figment of my imagination, a memory.
JULIE: No, it's me; I am always with you and searching for ways to console you . . .[7]

No wonder Camille Flammarion wrote to his confessor that Spiritism

> is a new science that has just appeared on the horizon, and emanates from God himself, through the ministry of His spirits . . . This religion surprises at first, but is rational, and will be the culmination of Christianity; it explains all the dogmatic truths of the future life that have previously been so mysterious.[8]

Flammarion's words hinted, too, at another dimension of Kardec's success: not only did he tap Romantic socialism yet gut it of its revolutionary edge, he also managed to tip his hat to the Church, presenting Spiritism as supplementary rather than oppositional to Catholicism (in Flammarion's terms its "culmination").

If Kardec had managed to perform this difficult balancing act during his lifetime, the tensions between Spiritism and other currents in French culture were not so easily evaded after his death in 1869. Monroe tackles this breakdown through a close look at the trial of the new Spiritist leader Pierre-Gaëtan Leymarie, the spirit photographer Edouard Buguet, and the medium Alfred Firman, who were all found guilty of fraud and sentenced to prison in 1875. The problems began with Leymarie, who took the movement in a new direction. Whereas Kardec had presided over a period of doctrinal revelation, Leymarie proposed to assemble empirical evidence for the spirit hypothesis more systematically. He also refused to continue muting the political implications of Spiritism, as Kardec had done, and instead began to play up links to the democratic left. The *Revue spirite*, for instance, began to publish articles on women's rights, socialist factories, and similar topics. In the contentious atmosphere of the Third Republic, however, this put Leymarie and his collaborators directly at odds with the two groups then vying for control of France: secular republicans and conservative Catholics.

Leymarie's embrace of spirit photography—the use of photographic techniques to record the appearance of seance spirits objectively in order to prove the spirit hypothesis—became especially problematic. Although spirit photography had been practiced in the 1860s, the police had taken little notice, considering it apolitical and harmless. But in the politically charged atmosphere of

7 Ibid., 113.
8 Ibid., 126

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

the 1870s, such toleration was no longer possible. When police went to investigate the spirit photography studio of Buguet, they discovered a room full of gauze-wrapped dolls used to simulate spirits on preexposed plates that were then used to "record" the appearance of seance spirits. Conservative Catholics and secular republicans, two groups that could agree on little else, united in condemnation of such preposterous fraudulence. For Catholic commentators, the trial became an occasion to reiterate that belief in the supernatural was instinctual but prone to severe distortion—witness the Spiritists—unless governed by the Church. By attempting to suppress faith, these commentators implied, secular republicans doomed the country to fraud, superstition, and self-destruction. For republicans, in contrast, Spiritism was problematic not because it perverted human instinct, but because it was atavistic, a marker of how much education and enlightenment still needed to be done to bring Frenchmen into a secular and democratic age. In a final chapter and epilogue, Monroe takes the reader up to the late twentieth century, tracing the decline of Spiritism and the rise of psychical research, scientific psychology, and new occult movements like Theosophy and Martinism.

Monroe's is a first-rate book that uses Spiritism and like-minded movements to enlarge our understanding of nineteenth-century French religious life and its political and cultural dimensions. By identifying and closely attending to the "crisis of factuality," moreover, Monroe also exposes central metaphysical and epistemological anxieties of the period. In what sense, these religious seekers asked, was there a spiritual reality beyond the reach of the five senses? How and by whom, they wondered, could it best be studied? Boldly seeking empirical guidance on such questions in occult venues, these men and women showed how incompletely secular positivists or Catholic conservatives owned belief and knowledge in the modern age.

Monroe's decision to view these movements as primarily religious, however, also has one drawback: it downplays the scientific aspirations of these seekers. The book's title and central analytic theme acknowledge these aspirations, of course, yet the fascinating story of scientific heterodoxy in this period remains curiously underdeveloped. Take, for instance, the case of the astronomer and writer Camille Flammarion. His conversion to Spiritism in 1861 solved, at least temporarily, the crisis of faith into which his scientific studies at the Paris Observatory has plunged him. But was it only religious faith that was at stake here? Flammarion's assurance to his former confessor that "I study Spiritism as I study mathematics" suggests not. These scientific aspirations became even more pronounced in 1899, when Flammarion publicly renounced the spirit hypothesis in favor of an explanation that drew on new models of the subconscious being elaborated by Pierre Janet, Charles Richet, Sigmund Freud, and others. By this point, moreover, Flammarion had also become the country's leading scientific

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popularizer, perhaps most famously for introducing the notion of extraterrestrial life to mass audiences. That a trained scientist could espouse so many scientifically heterodox positions—the possibility of extraterrestrial life, the existence of spirits, and the action of subconscious forces—was surely no accident, and suggests that the epistemological and metaphysical crisis in religious venues had its counterpart in scientific ones. Whether we call them scientific or religious, all of these seekers in one way or another sought to enlarge the scope of what could be empirically studied by pushing to access realms of nature beyond the reach of the five senses—whether on Mars, in the unconscious, or in the existential beyond. By so adeptly developing the religious side of this process while attending less systematically to the scientific one, Monroe has in any case set a fruitful agenda for future researchers interested in this topic.

MODERN ALCHEMY

The appeal of the occult to those seeking access to realms of nature previously off-limits also figures in Mark S. Morrisson's *Modern Alchemy: Occultism and the Emergence of Atomic Theory*, albeit in different ways. Focused on alchemy and its links to early atomic theory, Morrisson's book emphasizes the scientific rather than religious aspects of occultism and explores a slightly later period, from the 1890s through the interwar years. Morrisson sets up his study by narrating a telling exchange between the chemist Frederick Soddy and the physicist Ernest Rutherford in 1901. A joint experiment in their lab at McGill University had just demonstrated the transformation of one element into another (radioactive thorium decaying into an inert gas, later shown to be helium). As Spencer Weart recounted in his 1988 book *Nuclear Fear: A History of Images*,

> Soddy recalled, "I was overwhelmed with something greater than joy—I cannot very well express it—a kind of exaltation." He blurted out, "Rutherford, this is transmutation!" "For Mike's sake, Soddy," his companion shot back, "don't call it *transmutation*. They'll have our heads off as alchemists."[9]

Why, Morrisson asks, did Soddy invoke the alchemical term "transmutation" so quickly? And why did Rutherford react to Soddy's remark so forcefully?

One of the crucial contexts for this exchange was nineteenth-century chemistry, which rested on the belief that atoms were fundamental and immutable particles of matter. Although theoretical criticism of and discomfort with the atomic hypothesis had been voiced throughout the century, serious problems began to surface in the 1890s. Evidence gleaned from experiments with radioactive

[9] Mark S. Morrisson, *Modern Alchemy: Occultism and the Emergence of Atomic Theory* (Oxford: Oxford University Press, 2007), 4.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

elements, for instance, demonstrated charged particles (what we now call electrons) breaking off from these supposedly indivisible pieces of matter. Soddy and Rutherford's experimental transformation of one element into another a few years later provided yet another challenge. To compound matters, such results smelled of alchemy, which had been under assault at least since the Enlightenment for its unscientific goals and methods. Nonetheless, the new results seemed to confirm that the old alchemical metaphysics, which held that elements were both divisible and mutable, had in some sense been right after all.

Soddy's exclamation and Rutherford's shushing provide the occasion for Morrisson's book, which aims to show how an "alchemical revival" among occultists informed and was shaped by new studies of radioactivity among scientists. An "alchemical trope," Morrisson shows, pervaded both milieus. The "broad revival of interest in alchemy in the late nineteenth and early twentieth centuries (that included occultists, non-occult historians of chemistry, educators, journalists, and scientists alike)," he argues, "gave chemistry a trope that influenced its public reception and its sense of its own identity and that contributed to its early understanding and portrayal of radioactivity's significance."[10] Vice versa, the new science of radioactivity altered the program and self-understanding of occultists, who eagerly embraced the experimental dissolution of matter as a vindication of their own world view.

Morrisson develops this claim in four chapters, two focusing on the alchemical revival in the occult milieu (chapters 1 and 2) and two focusing on the use of alchemical tropes in chemistry, physics, and economics (chapters 3 and 4). Chapter 1 focuses on the Alchemical Society, founded in London in 1912 by a group of occultists and scientists. Recent experimental results forced both groups to revise their understanding of alchemy. Although the members never reached a final consensus, they did begin to speak of alchemy less as a discredited science, as had been the tradition since the Enlightenment, than as an honorable forerunner to modern chemistry. H. Stanley Redgrove, the founder of the Alchemical Society and a Fellow of the Chemical Society, indeed, expressed a common view in 1913 when he noted that

> recent developments in physical and chemical science seem to indicate that the alchemists were not so utterly wrong in their concept of nature, as has formerly been supposed—that, whilst they certainly erred in both their methods and their interpretations of individual phenomena, they did intuitively grasp certain fundamental facts concerning the universe . . . As for the basic concepts of Alchemy themselves, such as the fundamental unity of the Cosmos and the evolution of the elements . . . these seem to me to contain a very valuable

[10] Ibid., 9.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

element of truth—a statement which, I think, modern scientific research justifies me in making.[11]

Statements like this, Morrisson suggests, indicate that the Alchemical Society functioned as a place where the usual barriers between scientists and occultists temporarily went down, allowing for a productive exchange of data and metaphors.

Chapter 2 moves back to the 1890s to probe the origins of "occult chemistry" in Theosophical circles. Long before the founding of the Alchemical Society in 1912, it turns out, occultists were paying close attention to developments in chemistry and physics. Inspired by news about radiochemistry, Annie Besant and Charles Leadbeater, both leaders of the international Theosophical movement, launched a series of experiments in what they came to call "clairvoyant chemistry." Rather than using the physical instruments of the new atomic science (e.g. cloud chambers), however, Besant and Leadbeater used their own psyches to probe sample elements provided by the eminent chemist William Crookes and a mineralogical museum in Dresden. In the process, they broke atoms down into their constituent parts and discovered seven states of physical matter (most Victorian physicists accepted only three: solid, liquid, and gas). Atomic scientists, needless to say, took little notice, but occult chemistry continued to draw a scattering of adherents through the late twentieth century.

Having traced in his first two chapters some of the ways in which primarily occultists responded to scientific developments, Morrisson turns in chapter 3 to the alchemical trope that informed the portrayal and reception of the new science of radioactivity. His key evidence here comes from Soddy and his fellow chemist Sir William Ramsay. Both men performed key experiments that helped establish the new field of atomic science: Soddy had conducted the experiments with Rutherford in 1901; Ramsay had later confirmed and extended these results demonstrating radioactive transformation before embarking in 1907 on a highly public but ultimately doomed attempt to transmute an element artificially (finally achieved in 1919 by Rutherford). Both earned Nobel Prizes for this and related work. Given their preeminence as pioneers of the new atomic science, it is striking that both used alchemical terms and allusions to present their results. In 1911, for instance, Ramsay alluded obliquely to alchemy in his presidential address to the British Association for the Advancement of Science by quoting Michael Faraday to the effect that to "decompose the metals, to reform them, and to realize the once absurd notion of transformation—these are the problems now given to the chemist for solution." Soddy went even further in a 1912 article published in *Scientia* under the title "Transmutation: The Vital Problem of the Future." There,

[11] Ibid., 57.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

he called on "the modern scientific alchemist" to develop ways to harness the energy released by radioactive elements for the benefit of civilization.[12]

How does Morrisson explain this turn by two such eminent chemists to alchemical tropes? For one thing, alchemical tropes were available. By the late nineteenth century, university courses in chemistry regularly included some attention to the history of alchemy. In a course taught at the University of London in 1896, for instance, Ramsay devoted two lectures to alchemical history. Rather than denigrating alchemy as a pseudoscience, as had previously been common, Ramsay instead spoke of alchemy as a historical science whose essential insight about the transmutability of matter was finding some corroboration in recent experimental work. Also at work, Morrisson suggests, were border skirmishes over who owned the phenomena of radioactivity: physical chemists or atomic physicists. Ramsay and Soddy practiced physical chemistry, a relatively new branch of the chemical sciences. The border skirmishes with physicists, Morrisson suggests, may well have inclined Ramsay and Soddy to cross another border, this one between science and the *fin de siècle* occult revival.[13] In any case, the high point of alchemical claims came in 1913, when Ramsay announced at a Chemical Society meeting that he had effected artificial transmutation experimentally. Although it turned out that he had unknowingly introduced impurities into his experimental setup, Morrisson exploits this event to show just how far the "transmutational gold rush" had infected physical chemists. Morrisson finishes the story in chapter 4 by tracing the alchemical trope into discussion of the gold standard in the interwar years, discussions in which Soddy was instrumental.

What are we to make of all this? Morrisson has certainly uncovered fascinating material that points up the problem with the boundaries that historians of science usually draw around their field. For one thing, he has reminded us that scientific practice encompasses more than just what scientists do. Leadbeater and Besant, for instance, engaged in clairvoyant experiments, cited scientific work, presented complex mathematical calculations, and insisted that any clairvoyant chemistry of the future would have to strive for reproducibility of results. Morrisson has also uncovered a little-known chapter in cultural history by demonstrating the existence of an alchemical renaissance, both rhetorical and experimental, in the early years of atomic science. For all of this, he is to be applauded.

Half of the book's larger argument, however, remains tantalizingly unproven. Morrisson certainly shows the impact of scientific developments on occult circles. But his claims about influences flowing in the other direction are more

[12] Ibid., 110 and 112–13.

[13] Ibid., 109. See also Appendix A.

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problematic. Is Morrisson warranted in claiming about Ramsay and Soddy, for example, that "the alchemical revival had clearly informed their sense of the nature of their discipline so strongly that it may have helped guide their theorization and research agendas involving radiation and atomic transmutation along different paths from those followed by the physicists involved in turn-of-the-century atomic theory"?[14] Alchemical terminology certainly appeared in their works: Soddy used the terms "transmutation" and "alchemy" explicitly, while Ramsay tended to stick to more neutral words like "transformation" or modified phrases like "so-called transmutation" before switching, around 1912, to a more open embrace of "transmutation."[15] But does using alchemical tropes mean that it was the alchemical revival in occult venues that influenced these two scientists? Morrisson can only point to circumstantial evidence to link the two. Neither Ramsay nor Soddy were involved in the Alchemical Society, though they both knew John Ferguson, the Regius Professor of Chemistry at Glasgow and honorary chair of the Alchemical Society, so it is possible that they heard of the society's discussions through him. Nor is it clear that Ramsay or Soddy had contact with the *fin de siècle* occult movement, which pre-dated the Alchemical Society. The most likely point of contact would have been the occult press, but Morrisson offers little evidence that Ramsay or Soddy ever encountered such publications.[16] By what channels and mechanisms, then, did the occult revival influence developments in atomic science? Although Morrisson assures us in the book's introduction that he is "not arguing for a symmetrical influence between occultists and the scientists who created modern atomic science," he is clearly arguing for some influence in these last two chapters and it is there that the historical argument breaks down.[17]

This, then, brings up a second problem. In focusing so much on how scientists and occultists influenced each other, the book identifies but does not systematically answer key historical questions about the religious aspects of this revival. Morrisson suggests, for instance, that the occult chemistry of Leadbeater and Besant was an attempt "to bridge a divide, one expressed so urgently at the turn of the century, between religion and material science." Which religions or religious beliefs were at stake here? What made occult chemistry's attempt to "re-enchant" science religious rather than (or in addition to) scientifically heterodox? How representative were the Theosophical dilemmas experienced by Leadbeater

[14] Ibid., 109.

[15] Ibid., 116.

[16] Ramsay, Morrisson notes, "almost certainly" used texts from occult presses to inform his lectures on the history of alchemy, but provides only one possible candidate for such exposure. Ibid., 102.

[17] Ibid., 9

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and Besant of more mainstream crises of faith? In the conclusion, to give another example, Morrisson takes his story up to the present by tracing alchemical tropes into late twentieth-century psychoanalysis and psychedelic drug culture, noting on the book's last page that alchemy has retained "its ability to destabilize boundaries between religion and science."[18] Again, which religions or religious beliefs are at stake here? What is religious about the turn to psychoanalysis and the use of psychedelic drugs? How representative is this episode of destabilization? More generally, have religion and science ever really been as divided as the phrasing in these two passages implies? Morrisson's findings, indeed, challenge this way of framing the problem. All of his players—whether scientists, occultists, journalists, or novelists—belonged to a larger cultural transformation in which a basic consensus about the structure of reality, how best to study it, and its meaning for human society broke down. In this context, the occult became a tool for creatively rethinking and repackaging the world, both scientifically and spiritually. Morrisson's argument might have worked better, in short, had he simply left aside claims about "influence" and "division" between science, religion, and the occult, and concentrated instead on elucidating more clearly the mechanisms and borrowings by which alchemical tropes helped make this transformation possible.

None of this should detract from Morrisson's significant achievements in this book. The explosion of alchemical talk among occultists, scientists, and others at the *fin de siècle* is striking. In identifying the alchemical trope, tracing its wide diffusion, and showing how useful it proved to a wide variety of people involved in rethinking the nature of matter, energy, and even money, Morrisson has offered a compelling rhetorical analysis of an important chapter in European cultural history. And the questions that he raises but does not fully answer will provide excellent starting points for future researchers interested in exploring the role of the occult in the making of twentieth-century modernities.

Taken together, these two books underscore the problem with speaking about the occult as a marginal refuge for those caught in the epic battle between science and religion. In open societies, after all, citizens of all cultural and political persuasions are free to borrow and mix beliefs and practices, whether scientific or religious or other, in any way that they see fit. Theosophists, to take but one example, have maintained an explicit commitment since their emergence in the late nineteenth century to explaining all the world's religions, sciences, and philosophies in terms of an underlying and universal occult tradition. They seek a world view that leaves behind the dichotomies of a previous age, especially the dichotomy of science versus religion. Scholars might do well to

[18] Ibid., 95 and 193.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press

follow Theosophists' lead by moving beyond "between religion and science" to invent new ways to think about the epistemological, metaphysical, and even moral anarchy of the modern condition. The occult, these and other recent books suggest, offers an occasion for us to do so. If not between science and religion, then, where does the occult fit? We may need to redraw the map of modernity around eclectic, competing, and overlapping "world views" to find out.

https://doi.org/10.1017/S1479244309990205 Published online by Cambridge University Press