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# Editorial Introduction: The Visual Culture of Science and Art in *Fin-de-Siècle France*

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Depuis quelques années, il devient plus qu'évident, pour qui sait observer, qu'une évolution paradoxale se prépare dans le développement de notre intellectualité nationale. Avec l'engouement pour la science positive, avec les enthousiasmes qu'elle avait suscités dès son baptême, agonise, râle, se meurt l'esthétique qui était née d'elle.

Georges-Albert Aurier, "Les Symbolistes"<sup>1</sup>

In 1892, the influential art critic Georges-Albert Aurier penned an important article on the French Symbolists, in which he set up a dichotomy between scientism and metaphysics.<sup>2</sup> Symbolist artists, he stated, rejected scientific observation in favour of the imagination. And so began almost one hundred years of scholarship that for the most part accepted this polemic of assuming that the Symbolists were opposed to science and suspicious of nature. The notion that science had little place within Symbolist theory meant that the Symbolists were more often than not described as being out of touch with the "progressive," or modern elements of nineteenth-century Europe.

While French Symbolists did, for the most part, take an escapist stance towards modernity, they did not reject all aspects of modern life, and many followed and employed developments in science. As scientific disciplines professionalized during the nineteenth century, positivist doctrine was disseminated through journals such as *La Nature* and through the publications of scientific popularizers like the astronomer Camille Flammarion. These texts, along with the emergence of science museums, promoted the empirical method of experimentation and the importance of indisputable documentary proof in the form of scientific illustrations and photographs. The Symbolists utilized scientific methods in two main ways: to legitimize metaphysical ideas by demonstrating that these ideas had a scientific foundation, or alternatively, to demonstrate that scientific theories were, at their core, metaphysical in nature. The art critic Camille Mauclair used the phrase "scientific symbolism" (*le symbolisme scientifique*) to sum up the attempts by Symbolists and other artists to reconcile science and religion during this period.<sup>3</sup> The efforts to make transcendental ideas seem more scientific often retained the structure of a theological order, but with scientific or pseudo-scientific laws replacing beliefs based on faith. Science and art were both perceived as regenerative forces during the late nineteenth century. The Symbolists shared a common goal with the earlier Romantic movement: to seek scientific proof of a harmonious natural order.

This special issue of *RACAR* addresses *fin-de-siècle* French artists' interest in and understanding of scientific theories, as well as their connections with the scientific community. The idea for this issue grew out of a conference session I organized

for the Society for Literature and Science in Austin, Texas, in 2004, which in turn was stimulated by interdisciplinary literature of the last twenty years that challenges the implication of Aurier's argument.<sup>4</sup> The original four panelists, Barbara Larson, Martha Lucy, Maria E. Di Pasquale, and Allison Morehead, have each written articles. Contributions by Mark S. Morrisson, Anne Byrd, and myself round out the issue. The seven essays discuss well-known Symbolists such as Auguste Rodin, Odilon Redon, Paul Gauguin, Joséphin Péladan, and the Nabis;<sup>5</sup> artists working close to the Symbolist milieu, such as Paul Cézanne; and pseudo-scientific illustrators whose images penetrated Symbolist circles. Theosophy and Spiritualism are highlighted here as popular religio-philosophical movements, which widely disseminated "scientific" visual proof of their worldviews through their influential publications.

Like others in this period, Symbolists struggled with changes in the post-Enlightenment world, in particular with the shift towards increasing secularization. Many reacted to these changes with a sense that civilization was declining. Max Nordau's important 1892 publication *Entartung (Déchéance)*, 1894) claimed that avant-garde art, including Symbolism, was symptomatic of social degeneracy, and he quoted from the Symbolist critic Jules Bois and cited the misty portraits by Symbolist Eugène Carrière as evidence of the confused thinking suffered by "hysterical" artists.<sup>6</sup> While avant-garde culture represented a sign of "degeneration" for Nordau, for the Symbolists it offered a method of rejuvenation. Their goal of renewing Western art would be achieved through the search for humanity's primitive roots and ancient knowledge, an area that was simultaneously being investigated by scientists during the nineteenth century.

Some Symbolists responded to this perceived decay by turning to marginal religio-philosophies, such as Theosophy and Spiritualism, as a path to renewal. These unorthodox, "popular" religions were often made more acceptable by employing elements from science as legitimizing devices. Contemporary theories from biology, psychology, chemistry, physics, and neurology were grafted onto metaphysical worldviews in order to uncover their intuited scientific foundation. Sometimes, this meant referring back to earlier scientific practices, such as what is now referred to as "Romantic science," practices that were less materialistic than Positivism. Reference was also made to even older models of science, which by the nineteenth century had been degraded to "occult sciences." Similarly, some artists searched for the enchanting elements in new scientific theories. Theories that dealt with the origin and development of the universe lent themselves to the "re-enchantment" of science.

Attempting to legitimize religious philosophies by either looking for their scientific foundations or searching for proof

of a divine pattern within scientific theories was part of the hybrid culture of religion and science that thrived in Paris during the 1890s. Camille Flammarion gravitated to Spiritualism (*Spiritism*) and suggested it was a scientific religion.<sup>7</sup> Alongside his more mainstream publications on astronomy, Flammarion produced an impressive body of work on Spiritualism and the “unknown,” intelligent forces that he felt directed the universe.<sup>8</sup> Being a Spiritualist and a scientist was not a contradiction for Flammarion because the Spiritualist movement, which accepted that personality continued after death, conceived of and promoted itself as scientific, fashioning séances as experiments and spirit photographs as scientific illustrations.<sup>9</sup> Theosophists also grounded their theories in science, whether it was Helena Blavatsky’s reliance on evolutionary theory to conceive of enlightenment as a form of spiritual evolution and involution or Annie Besant’s application of the principals of experimental chemistry to her astral, illustrated psychic experiments. While Flammarion and Blavatsky sought a new religion whose fundamental truths were provable by scientific laws, Joséphin Péladan, the art critic who revived the *Ordre de la Rose+Croix*, looked for the scientific base of traditional Catholicism, which he found in the occult sciences.

“Scientizing” religion was one common trope. The other element of this hybrid culture of science and religion was the process of making science itself wondrous, by using its empirical methods to uncover definitive proof about the divinity or the unity of the Cosmos. According to historian Peter Bowler, continuing into the twentieth century, many *fin-de-siècle* scientists were promoting Jean Baptiste Lamarck’s and Etienne Geoffroy Saint-Hilaire’s older and deeply entrenched evolutionary theories, which were closer to natural theology in their emphasis on common descent, progression, and vitalism, over Charles Darwin’s more random natural selection.<sup>10</sup> As we will see in the articles below, to be able to uncover a unitary Cosmos and unveil the occult knowledge once privy to ancient humanity was a goal for many Symbolists. Redon’s fascination with the mutable and formless quality of basic cellular life was a search for primordial knowledge. Symbolist writer and critic Jules Bois used his education in psychology to come to terms with the extra-individual powers he sensed were available through studying the unconscious mind. For Bois and for his fellow Symbolist writer Maurice Maeterlinck, the unconscious was the source of the divine, and thus a repository of all knowledge, past and future. Similarly, in their book *Occult Chemistry* (1908), Annie Besant and Charles Leadbeater investigated the subatomic world for the visual symbol of the “original matter of the universe.”

Using science to support a romantic goal was bound to be problematic. Indeed, as much as nineteenth-century science could be manipulated to support the idea of the unity of all life and a supernatural unconscious, this knowledge continued to

challenge the basic Christian notions of a natural order with humanity in the privileged position. In their articles, Martha Lucy and Barbara Larson examine how artists wrestled with the theories of contemporary science—evolutionary theory in Redon’s case and neurology in Rodin’s—that confuted the traditional definition of humanness and our status in the universe. Redon’s indeterminate, but anthropomorphized forms, and Rodin’s incomplete bodies can be regarded as contemplations on fundamental philosophical questions about what it meant to be human. Similarly, Anne Byrd suggests that Cézanne’s obsession with the geological processes of Aix-en-Provence records his struggles with the idea of human evolution in a random, Darwinian universe.

The rejection of materialism is a characteristic of Symbolist theory, but those artists longing for a more spiritual “new age” (*nouvelle ère*) did not ignore all science as has been supposed. What this special issue will make clear is that scientific and pseudo-scientific theories were integral to the production of some Symbolist art. Each of the authors deals with an aspect of the scientization of religio-philosophics. These papers utilize an interdisciplinary approach to visual culture, and investigate how science was received by artists during the late nineteenth and early twentieth centuries in France. The images included in the articles are a fascinating compendium of scientific culture at the turn of the century, including illustrations, photographic documentation of scientific experiments, and renderings of subatomic molecules, all of which found their way into the Symbolist imagination.

The first paper by Martha Lucy deals with Redon’s response to the theory that underlies the dominant scientific paradigm of the nineteenth century—evolution. By the 1880s in France, primitive humans were being imaged by academic artists such as Fernand Cormon (*Cain*, 1880) and Emmanuel Frémiet (*Stone-Age Man*, 1872). But as Lucy notes, Redon did something other than illustrate the latest archeological information about cave-man, he went further back in evolutionary time to the origins of life. Redon considered how evolutionary thought altered the very conception of body and self. Looking especially at *Les Origines*, his lithographic album of 1883, Lucy argues that Redon’s cast of hybrid creatures overturned the nineteenth-century ideal of immutable human form created by a rational God. In Redon’s evolutionary universe, the human body is never secure; throughout the album we are confronted with abject, indeterminate beings that seem to anticipate the Surrealist notion of *l’informe*. Redon’s creatures struggle with the formlessness and baseness of becoming, and what is even more radical, they never reach wholeness or perfection, the norm in nineteenth-century Western art. According to Lucy, Redon understood the arbitrariness of natural selection. Redon’s technique of taking forms back to their initial stages of being, allowing the bodies and

faces to be arbitrarily put together, challenged the sanctity of the human body and questioned the very notion of the unified self.

Nineteenth-century science confronted the traditional Christian view of humanity's privileged place in the universe, and Barbara Larson's article discusses how Rodin reacted to the changing definition of humanness.<sup>11</sup> Larson contextualizes Rodin's innovative, fragmentary figures by examining the medical models from the *École de Médecine*, created during the 1860s, that were attempts to map the functions and relationships of the body and the brain. Rodin exhibited disconnected body parts and disjointed and recomposed pairings of bodies as completed works of art in and of themselves. Larson argues that these pieces demonstrate knowledge of the medical and scientific advancements in neurology, such as electrophysiology and Paul Broca's localization theory. Rodin's *Adam*, with its figural exaggerations—expressive contrapposto, lolling head, and awkward arm positions—is a good example of the application of current medical and neurological theories to his work. Like Redon, Rodin contested the French national ideology linking health and morality, and in doing so both artists also challenged the idealized image of the human form. Their work prefigured twentieth-century avant-garde artists' representations of the human body as incomplete and broken.<sup>12</sup> Rodin's understanding of a compartmentalized brain, which he learned from localization theory, led him to deconstruct not only the human body but also, more profoundly, the human soul.

In the third essay, Anne Byrd probes Joachim Gasquet's epistemological writings about Cézanne's late paintings of the overgrown and scarred Bibémus Quarry in Aix-en-Provence. The friendship between Gasquet, Cézanne, and the Darwinian naturalist Antoine Fortune Marion during the 1890s is at the crux of Byrd's reading. Gasquet equates Cézanne's physical process of painting with the actual geological processes that fashioned the quarry. Cézanne's paintings of the quarry in a sense represent both nature and culture—the geological landscape of the quarry, with its evidence of human intervention, and the manner in which Cézanne re-presents the quarry in paint, creating it *tache* by *tache*. The Romantic notion of culture as a part of nature was revived during the *fin de siècle* because of evolution's repositioning of humanity as part of the animal kingdom.<sup>13</sup> Gasquet struggled to understand Cézanne's art through his personal matrix influenced by older French-based evolution theories and "Catholic vitalism," in the face of Darwinian theories of nature's indifference, and even more significantly, the Darwinian message of a purposeless universe.

Maria E. Di Pasquale's paper deals with Joséphin Péladan, the Roman Catholic art critic and leader of the occult-based Rosicrucian order. The members of the *Rose+Croix* saw themselves as the keepers of esoteric secrets, such as alchemy and symbology, and they updated their Christian-based beliefs with

Eastern philosophies. The occult movement in general was widely understood as having a scientific foundation, through its embodiment of an ancient and fundamental knowledge that combined science and spirituality. As Di Pasquale outlines, for Péladan, occult science was perceived as superior to the mere co-alition of the physical data of experience because it encompassed a union of the intellect and spirituality. As an art critic, Péladan especially reacted against the late nineteenth-century Naturalist movement, exemplified within Catholicism by the writings of Ernst Renan (*Vie de Jésus*, 1863) and works of art influenced by Renan, such as Aimé Morot's *Le Martyre de Jésus de Nazareth* (1883). The "historical" accuracy of these works made them devoid of any transcendental value for Péladan. His desire was to reestablish a hierarchical societal system that would combat what he perceived as the degenerative, democratizing influence of positivism, and to return French society to its "true" Catholic and monarchic roots, far from the egalitarian and secularist society that had developed during the nineteenth century.

Discussions about degeneration were prevalent in *fin-de-siècle* Paris especially because the city was one of the European centres for studies in psychology and the unconscious. The research of Jean Martin Charcot and Pierre Janet into hysteria and the trance state attracted much attention, and the general public was keenly interested in altered states of consciousness, including hysteria.<sup>14</sup> Both my paper and Allison Morehead's explore the Symbolists' fascination with altered and unconscious states through their investigations into hysteria, and another condition equated with the trance state—mediumship. Late nineteenth century Paris was also a centre for the Spiritualist movement and the connections between *Spiritism* and the Symbolists are abundant.<sup>15</sup> By the 1890s, doctors were diagnosing mediums as suffering from hysteria, because both hysteria and mediumship involved entering into a trance state. During this pre-Freudian period, the concept of the unconscious was fluid, and was considered by some to be a pathway to discarnate spirits, to extra-individual knowledge, and even to the divine. Doctors may have proposed hysteria and mediumship as evidence of fragmented minds and social degeneracy, but for many Symbolists these unconscious states were routes to creativity, and perhaps even transcendental knowledge.

The desire to depict the unconscious became a principal goal for Symbolists. In my article, I look at the efforts to inscribe the unconscious state by examining Symbolist plays by Maurice Maeterlinck and Rachilde for Paul Fort's *Theatre d'art*, and the related theatre advertisements by Paul Sérusier, Maurice Denis, and Paul Gauguin, all of which focused on rendering altered states of consciousness. The evanescent formal qualities evident in the prints produced for the *Theatre d'art* figured this transcendence of the ordinary bourgeois self through different visual metaphors of dissolution, and the style was labelled "l'art incon-

scient” by Jules Bois in an article of 1897 entitled “L’Esthétique des esprits et celle des symbolistes.”<sup>16</sup> I contend that the representation of self and the non-self, of the conscious and the unconscious mind, was integral to Symbolist culture, and I lay out in this article a common set of stylistic and iconographic practices used to solve pictorial problems regarding this liminality.

Allison Morehead studies the relationship between the unconscious, mediumship, and Symbolist aesthetics.<sup>17</sup> She notes that psychologists’ efforts to apply a scientific paradigm to the interior mind parallels Gustave Kahn’s definition of Symbolism as “objectifying the subjective” (*d’objectiver le subjectif*), a succinct summation of Symbolist aesthetics. Morehead outlines that the pathological emphasis of the new psychology in France focused on studying abnormal states in order to learn more about universal psychological phenomena. Morehead and I both argue that trance-states and mediumship were seen as alternative states of consciousness and thus provided new ways for artists to comprehend the psychological process of creativity. Morehead’s article examines the medium Hélène Smith’s relationship with the psychologist Théodore Flournoy, which resulted in his well-known book about somnambulism, *From India to the Planet Mars: A Case of Multiple Personality* (1900). This book helped secure the more positivist interpretation of mediums’ powers as a product of their rich imaginations, over the pre-Freudian view that speculated that mediums were in touch with the supernatural. As Morehead points out, both conceptions of mediumship allowed for the positing of the unconscious as a natural, instinctual realm where creativity is unleashed. These notions of creativity were key in establishing the Symbolist myth of the artist as visionary.

The last two essays, in discussing Spiritualism, move beyond individual Symbolists’ art practices into an exploration of the interaction between Symbolist culture and pseudo-scientific visual material from popular religio-philosophies. For his contribution, Mark S. Morrisson develops a chapter from his recent book, *Modern Alchemy: Occultism and the Emergence of Atomic Theory*,<sup>18</sup> in which he aligns science, popular religions, and art around a common goal: to visualize the invisible world. Morrisson focuses on Theosophy, which played a significant role in shaping the public perception of occultism in the Western world during the late nineteenth and early twentieth centuries. As we are increasingly coming to understand it, occultism was both a part of and a reaction to modernity and thus important to the development of Western culture.<sup>19</sup> The first generation of abstract artists, Wassily Kandinsky, Piet Mondrian, František Kupka, and Kazimir Malevich, responded with veiled and abstracted images to Theosophy’s metaphorical union of spirit and matter as the route to reharmonize and regenerate Western society. In his article, Morrisson moves away from comparing Theosophical imagery with fine art, and looks instead at the visual culture of the Theosophical movement itself. Morrisson

does not deal with the aesthetics of the Theosophical images, which are more propagandistic in nature than artistic; rather he contextualizes the shared visual culture of Theosophy and scientific illustrations.

Morrisson lays out how researchers in the fields of chemistry and physics incorporated visual data and detection instruments to strengthen experimental methodology, and how these methods were appropriated by Theosophists. Right from the early stages of the movement, Theosophists relied on science to help their popular religion gain legitimacy. The founder of Theosophy, Helena Blavatsky, had effectively utilized the evolutionary model of species adaptation in her seven stages of spiritual evolution and involution. But, she also relied on individual revelation, a common trope of the occult-religions, to transmit her wisdom, a method she would have learned in her youth as a practising medium. Theosophy and Spiritualism overlapped in numerous ways, including the desire to make these philosophies seem more scientific. Spiritualism was oriented to the power of the initiate—the medium—but the movement updated itself with a positivistic approach by emphasizing the “empirical proof” of ghosts through the photograph. Theosophy likewise moved to utilizing visual data in its publications.

After Blavatsky died in 1891, Annie Besant, the new leader of the Theosophical Society, began a series of experiments with Charles Leadbeater to visually record subatomic particles. In these experiments, as Morrisson explains, Besant validated her experiments with the two important scientific legitimizers, publication and scientific illustration. *Occult Chemistry* (1908), the result of these experiments, needed these boosters of visual display because Besant and Leadbeater’s experiments had a Theosophical twist—they were done clairvoyantly. Morrisson places *Occult Chemistry* as part of the larger trend of micrographia, in which the invisible world lends itself to knowledge about the visible world. The book illustrated a microphysical view of subatomic structures such as hydrogen, oxygen, and more even optimistically the “protyle” or primal matter, using the visual transcriptions of the clairvoyant experience as scientific data. Besant and Leadbeater attempted to employ instrument detection, but rather than use a camera or a microscope as the recording device, they posited the human observer as the instrument of observation. In this manner they updated their Theosophical scientific profile with theories from physics and chemistry that relied on the experiment. Yet, in the end, like Blavatsky’s earlier model, they still turned to the nineteenth-century occult notion of an expanded consciousness. In *Occult Chemistry*, the psychic human being becomes the detection instrument and the recorder all at once. The goal of their experiments was to search for subatomic primal matter from which everything in the universe developed, akin to the search by Romantic evolutionists for the origins of life. In his article about the Symbolists, Aurier claimed that

many nineteenth-century scientists had become discouraged by the realization that experimental science is less certain than a poet's dream.<sup>20</sup> Even with his penchant for exaggeration, Aurier was correct in noting that the professionalization of science in the nineteenth century had not ended metaphysical reverie. Both Camille Mauclair and Edwin Slosson saw science as prescribing morality and entering the terrain of religion; "Modern science, instead of killing mysticism... has brought about a revival of it," wrote Slosson.<sup>21</sup> The rise of science created new ways to legitimize metaphysical beliefs, and in some cases the perceived boundaries between science and religion blurred. Scientific theories around evolution and organic chemistry spawned late nineteenth-century revivals of neo-vitalism and Romantic science, which in some ways kept the metaphysical order, but replaced faith with so-called natural laws. Science and metaphysics both were seen to be investigating the invisible world, whether it be through subatomic particles, X-rays, cellular life, the unconscious mind, or ghostly materializations. Theories and illustrations exploring the invisible intrigued artists. A hybrid culture of Symbolism, science, and religion developed during the final years of the nineteenth century with artists, scientists, and religious philosophers all pursuing the common goal of visualizing the invisible. It was not science, but rather the materialistic explanations of the universe, of the origins of life, and of the purpose of life that the Symbolists rejected.

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### Notes

- 1 G.-Albert Aurier, "Les Symbolistes," *Revue Encyclopédique* 32, II (1 April 1892), 474-86, quotation, 474.
- 2 Aurier, "Les Symbolistes." A paragraph of this article is translated in Herschel B. Chipp, *Theories of Modern Art* (Berkeley, 1968), 93-94.
- 3 Camille Mauclair, "Le Symbolisme scientifique dans les décorations de M. Besnard," chapter two in *Albert Besnard: L'homme et L'oeuvre* (Paris, 1914), 25-50.  
There is no lack of contemporary scholarship on this hybrid cul-

ture of science and religion. Kurt Bayertz coined the phrase "spiritualization of matter" to explain evolution scientist Ernst Haeckel's materialistic Monism; Lynn Gamwell has described this phenomenon as the "secularization of spirituality"; Lynn Sharp called it the "rationalization of religion," and I have used the term "scientization" of religion. See, Kurt Bayertz, "Biology and Beauty: Science and Aesthetics in Fin-de-siècle Germany," in *Fin de Siècle and its Legacy*, eds., Mikulas Teich and Roy Porter (Cambridge, 1990), 285; Lynn Gamwell, *Exploring the Invisible: Art, Science and the Spiritual* (Princeton, 2004), chapter one; Lynn Sharp, "Rational Religion, Irrational Science: Men, Women, and Belief in French Spiritism, 1853-1914," PhD diss., University of California at Irvine, 1996; and Serena Keshavjee, "The 'Scientization' of Spirituality," in *Seductive Surfaces: The Art of Tissot*, ed., Katharine Lochnan (New Haven, 1999), 213-44. Also see Peter J. Bowler, *Reconciling Science and Religion: The Debate in Early Twentieth Century Britain* (Chicago, 2001).

- 4 Some of this pioneering research on *fin-de-siècle* art was produced by Filiz Burhan and Debora Silverman, who have demonstrated the links between Symbolism, occultism, and the emerging science of psychology. See Filiz Eda Burhan, "Vision and Visionaries: Nineteenth-Century Psychological Theory: The Occult Sciences and the Formation of a Symbolist Aesthetic in France," PhD diss., Princeton University, 1979; and Debora Silverman, *Art Nouveau in France: Politics, Psychology and Style* (Berkeley, 1989). Articles and books informed by these interdisciplinary approaches include Jean Clair, *L'âme au Corps: Arts et Sciences 1793-1993* (Paris, 1993). Barbara Larson published an important article in Clair's catalogue, "La Génération symboliste et la révolution darwinienne," which along with her thesis, "Odilon Redon: Science and Fantasy in the Noirs" (PhD diss., New York University, 1996), brought the intersection of evolutionary theory and nineteenth-century art into focus for Symbolist scholars. In 2003, Linda Nochlin and Martha Lucy compiled a special issue of *Nineteenth-Century Art Worldwide* (vol. 2, no. 2) on "The Darwin Effect: Evolution and Nineteenth Century Visual Culture," to which Larson also contributed. More recently on art and evolution, see Larson and Fae Brauer, eds. *The Art of Evolution: Darwin, Darwinisms and Visual Culture* (Lebanon, N.H., 2009); Pamela Kort and Max Hollein, eds., *Darwin, Art and the Search for Origins*, exh. cat., Frankfurt, Schirn Kunsthalle (Cologne, 2009); and Diana Donald and Jane Munro, *Endless Forms: Charles Darwin, Natural Science and the Visual Arts* (New Haven, 2009). Regarding psychology, Allison Morehead has analyzed the relationships between Symbolist techniques and the methodologies of experimental psychology. I have looked at Spiritualism as a scientific religion and noted how the Symbolists appropriated a scientific-spiritualist aesthetic in order to aid their goal of imaging the supernatural. See Allison Morehead, "Creative Pathologies: French Experimental Psychology and Symbolist Avant Gardes 1889-1900," PhD diss., University of Chicago, 2007; and Serena

- Keshavjee, "'L'Art Inconscient' and 'L'Esthétique des Esprits': Science, Spiritualism and the Imaging of the Unconscious in French Symbolist Art," PhD diss., University of Toronto, 2002. See also Keshavjee, "The 'Scientization' of Spirituality," 213–44. Moving more into the pseudo-sciences, Patricia Mathews and Rodolphe Rapetti investigated hysteria studies as an influence on Symbolist aesthetics. See Patricia Mathews, *Passionate Discontent: Creativity, Gender and French Symbolist Art* (Chicago, 1999); and Rodolphe Rapetti, *Symbolism*, trans. Deke Dusinberre (Paris, 2005).
- 5 Efforts to define a Symbolist aesthetic are challenging. Symbolism encompassed such a variety of styles and themes that taken together they almost undermine the idea of a cohesive movement. Michelle Facos's introductory chapter in *Symbolist Art in Context* reviews past scholarly efforts to define Symbolism, and in turn consolidates a definition that emphasizes formal aesthetics in the tradition of Reinhold Heller and Robert Goldwater. See Facos, *Symbolist Art in Context* (Berkeley, 2009), introduction. For a more wide-ranging view of the Symbolist movement, see Jean Clair, ed., *Lost Paradise: Symbolist Europe*, exh. cat., Montreal Museum of Fine Arts (Montreal, 1995).
  - 6 Max Nordau, *Degeneration*, uncredited English translation (London, 1895), 11 and 117.
  - 7 Flammarion described Spiritualism this way: "For gentlemen, *spiritualism is not a religion, but a science*, a science of which we as yet scarcely know the a,b,c. The age of dogma is past. Nature includes the Universe, and God himself, who was in old times conceived of as a being of similar shape and form as man, cannot be considered by modern metaphysics as other than *Mind in Nature*." Camille Flammarion, *Oration delivered at the Grave of Allan Kardec* (Paris, 1869), in Flammarion, *Mysterious Psychic Forces: An Account of the Author's Investigation in Psychical Research. Together with those of other European Savants*, uncredited English translation (1907: repr. Boston, 1909), 31. This translation used the term "spiritualism," however, Flammarion used the term "spiritism": "le spiritisme n'est pas une religion, mais c'est une science, science dont nous connaissons à peine l'a b c. Le temps des dogmes est fini. La nature embrasse l'univers, et Dieu lui-même, qu'on a fait jadis à l'image de l'homme, ne peut être considéré par la métaphysique moderne que comme *un Esprit dans la nature*."
  - 8 Camille Flammarion, *Des Forces naturelles inconnues: à propos des phénomènes produits par les frères Davenport et par les médiums en général* (Paris, 1865); *Dieu dans la Nature* (1868: repr. Paris, 1883); *Mysterious Psychic Forces*; and *Les Maisons Hantées* (Paris, 1923).
  - 9 See Sharp, "Rational Religion, Irrational Science." For primary source material that reviews Spiritualism, see Alexander Aksakow, *Animismus und Spiritismus* (1890: repr. Leipzig, 1919). Albert von Schrenck-Notzing, *The Phenomena of Materialisation* (London, 1920).
  - 10 See Peter J. Bowler, *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around 1900* (Baltimore, 1983), and *Reconciling Science and Religion: The Debate in Early Twentieth Century Britain*. Also see David J. Depew and Bruce H. Weber, *Darwinism Evolving: Systems Dynamics and the Genealogy of Natural Selection* (Cambridge, 1995), chapter seven; and Robert J. Richards, *The Triagic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (Chicago, 2008).
  - 11 Larson's influential articles introduced a range of scientific topics that had not been considered before in regards to Symbolism. See Larson, "La Génération symboliste et la révolution darwinienne," in Clair's *L'Âme au Corps: Arts et Sciences 1793–1993*, and "Microbes and Maladies: Bacteriology and Health at the Fin de Siècle," in *Lost Paradise: Symbolist Europe*, ed. Jean Clair. Larson's dissertation and publications, especially her book on Redon, deftly situate the place of science and society in Redon's art, and introduce Darwin and nineteenth-century art as valid subject in art history. See Larson, *The Dark Side of Nature: Science, Society and the Fantastic in the Work of Odilon Redon* (University Park, PA, 2005), and "Odilon Redon and the Pasteurian Revolution: Health, Illness and *Le monde invisible*," in *Science in Context* 17, no. 4 (2004): 503–24.
  - 12 On French *fin-de-siècle* attitudes towards the body, see Fae Brauer and Anthea Callen, eds., *Sex, Art and Eugenics: Corpus Delecti* (Aldershot, 2008); and Tamar Garb, *Bodies of Modernity: Figure and Flesh in Fin-de-Siècle France* (London, 1998), esp. chapters one and two.
  - 13 See Gamwell's introductory chapter in *Exploring the Invisible* for a fuller explanation of these ideas, especially the section "The Union of Pantheism and Natural Philosophy," 14–23.
  - 14 See Silverman, *Art Nouveau in France: Politics, Psychology and Style*; and Rapetti, *Symbolism*, 254–82, on hysteria; and Beth Rae Gordon, *Ornament, Fantasy, and Desire in Nineteenth-Century French Literature* (Princeton, 1992).
  - 15 See my dissertation, Keshavjee, "'L'Art Inconscient' and 'L'Esthétique des Esprits.'"
  - 16 Jules Bois, "L'Esthétique des esprits et celle des symbolistes," *La Revue des Revues*, January–March 1897, 405–20.
  - 17 See Allison Morehead, "Creative Pathologies: French Experimental Psychology and Symbolist Avant Gardes 1889–1900," PhD diss., University of Chicago, 2007.
  - 18 Mark Morrisson, *Modern Alchemy: Occultism and the Emergence of Atomic Theory* (Oxford, 2007). We thank Oxford University Press for permission to reproduce this version of Morrisson's article.
  - 19 Jeffrey Herf, in *Reactionary Modernism: Technology, Culture, and Politics in Weimar and the Third Reich* (Cambridge, 1986), lays out that anti-modern attitudes were a part of modernity. Theosophy and Spiritualism are excellent examples of neo-romantic philosophies that were utilized by avant-garde artists. See also Lynda Jessup, *Antimodernism and Artistic Experience: Policing the Boundaries of Modernity* (Toronto, 2001), introduction.
  - 20 Aurier, "Les Symbolistes," in Chipp, 94.
  - 21 Maclair, *Albert Besnard*, chapter two; Edwin Slosson, *Major Prophets of Today* (Boston, 1914), 13–14.