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Tracing the Paradigm Shift: Five Observations on Natural Science, Esotericism and the Belatedness of the Avant-Garde

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A useful point of departure for discussing the links between the natural sciences, esotericism and aesthetic modernity can be found in a series of popular lectures published by the philosopher Ágúst H. Bjarnason in Reykjavík in 1906. *Nítjánda öldin* [*The Nineteenth Century*] can be described as a veritable *tour de force* of the nineteenth century, dealing with fields as diverse as economics, political theory, philosophy, positivism, cosmology and ethics. Of specific interest is a series of speculations on the possibility of the afterlife, which Bjarnason presents at the end of a short subchapter on materialism. Discussing the role of consciousness and its relation to the body he poses the key question: "What happens to it, then, when man dies and his brain is completely dissolved?" (Bjarnason, *Nítjánda öldin* 223).[1]

In the first instance his answer is a familiar and seemingly logical one: "According to the knowledge that we currently have it is most likely that our psychic life is dissolved along with the body and that consciousness is so to say ingrained in our body" (Bjarnason, *Nítjánda öldin* 223).[2] The following remarks, however, hit a more tentative tone: "But who is able to say that this knowledge is not wanting in some respect? Who can claim, in these times when science is in the process of discovering new worlds of invisibe forces – such as for example all the types of radiation that are coming to light – that something doesn't indeed remain after the body dies and is dissolved, be it only a certain vibration of waves that can continue to live a life of its own, although the body dies" (Bjarnason, *Nítjánda öldin* 223).[3] Accordingly, Bjarnason arrives at his conclusion: "It is safest not to make any decisive claims in these matters as long as the human spirit has not managed to solve the greatest mysteries pertaining to them" (Bjarnason, *Nítjánda öldin* 223).[4]

It is tempting to read these remarks as merely the expression of a sound and cautious attitude toward the current state of scientific knowledge or even as the remnant of a past religous worldview, struggling to hold on to the possibility of the afterlife in a disenchanted world. Yet, what caught my attention was the fact that these reflections follow immediately after Bjarnason's thorough discussion of thermodynamics in the preceding chapter – and curiously enough, when he returns to the question of the afterlife later in his chapter on positivism, he does so by paraphrasing Hermann von Helmholtz: "Just like every small light wave, he says, is carried through the whole universe before its role is finished, thus it can also be expected that those ethereal waves that may accompany man's psychic life might also be carried throughout the universe and reach their aim and perfection there, although the body dies and is dissolved" (Bjarnason, *Nítjánda öldin* 236).[5] It should be noted that the Icelandic philosopher, who had studied philosophy at universities in Copenhagen, Strassbourg and Berlin and would move on to finish his doctoral studies under the supervision of Harald Høffding with a dissertation on the philosophy of Jean-Marie Guyau in 1911 (Bjarnason, *Jean-Marie Guyau*), does not refer to Helmholtz's views without reservations as a valid scientific fact.[6] He rather seizes the opportunity to remind his readers, in a speculative manner, of this "captivating thought" of the "great German physicist" (Bjarnason, *Nítjánda öldin* 236).[7] Yet the fact remains that, from Bjarnason's perspective, the

strongest argument for the afterlife lies not in claims about the existence of God or a divine force, but in the first law of thermodynamics. As he describes that law, again paraphrasing Helmholtz: "no energy or force of nature becomes nothing, but energies change from one state into another" – or: "Nothing dissolves in this world and nothing becomes nothing" (Bjarnason, *Nítjánda öldin* 213, 236).[8]

A closer look at Bjarnason's text reveals that the problem he is confronted with is consciousness, as he struggles to come to terms with new paradigms of the empirical sciences without abandoning that concept. His writing can be described as the work of a devoted spokesman of the empirical method, which is based on a monist worldview rooted in the scientific models of nineteenth-century naturalism, for which there consisted "only one kind of stuff", namely "matter", and everything needed to be "reduced to and explained in terms of this stuff, or be eradicated from our ontological vocabulary altogether" (Asprem, *Problem* 70). To put it shortly: either consciousness needs to be reconceptualised in empirical terms or it loses its viability as a scientific notion, is degraded into mere metaphysical speculation. In his reluctance to abandon consciousness the Icelandic philosopher is thus left with the only option of defining it as a material phenomenon, i.e. in terms of energy. From Bjarnason's viewpoint in 1906, strictly following the laws of thermodynamics, it is evidently impossible for this energy to mysteriously vanish from within a closed system. To put it somewhat crudely: those who categorically rule out the possibility of the psyche's afterlife do not have a clue about modern physics and the first law of thermodynamics.

From this perspective it can be seen as a logical step in Bjarnason's further development that in the following years he became not only one of the harshest critics of spiritualism in Iceland, but also one of the intellectuals who showed a great interest in experimental psychic research.[9] Of special interest is a number of his texts from the mid 1910s, dealing with paranormal phenomena from a strictly empirical viewpoint. In 1915 he published a book on the psychic medium Drauma-Jói or Dreaming Joe, dealing with "telegnosis" and its different manifestations, such as processes of mental suggestion, telepathy, telaesthesia and second sight, explaining those phenomena by means of a theory of "mind waves" or "the most subtle ethereal waves that are carried from one man to the next and invoke in him a similar psychic state" (Bjarnason, *Drauma-Jói* 10, 22, 20).[10] A further publication of interest is a long article from the previous year, in which Bjarnason discussed Julian Ochorowicz's *De la suggestion mentale* [*On mental suggestion*]. The book had presented the results of the Polish psychologist's extensive research on the famous medium Eusapia Palladino and the phenomenon of effluvium (Bjarnason, "Rannsókn"; see also Ochorowicz). The article from 1914 shows to what extent Bjarnason's writings on paranormal occurrences were developed in close dialogue with what was seen as cutting-edge research in international parapsychology – and indeed Bjarnason's writings not only reached a smaller local population in Iceland with a vivid interest in the paranormal, because in 1915 his results were also published in the journal of the renowned Society for Psychical Research in London, which came to the conclusion that the piece on Drauma-Jói provided a "genuine case of sensory automatism" (Bjarnason, "An Icelandic Seer" 81). Bjarnason thus belonged to an international community of investigators for whom "automatic utterances, oral or written, the possibility of telepathic communications between two or more people, the relationship between hypnotism and telepathy were all questions deemed worthy of intensive study for what they might reveal about the workings of the human mind" (Oppenheim 120).

Bjarnason was not the only philosopher active within the field of psychic research who was struggling to come to terms with consciousness. Two years before he

published his remarks on thermodynamics and the possibility of an afterlife, William James declared that "for twenty years past" he had "mistrusted consciousness as an entity" and had been "suggest[ing] its non-existence to [his] students" (James 477). In similar terms the American psychologist James Angell argued in a paper addressed to the American Psychological Association in 1910 that it was "quite within the range of possibility […] to see consciousness as a term fall into as marked disuse for everyday purposes in psychology as has the term soul" (quoted in Asprem 170). What is to be done with consciousness? – this was indeed one of the questions lying at the heart of debates within biology and psychology in the beginning of the new century. In Bjarnason's case, we can see how the first law of thermodynamics indeed played a double role. On the one hand the idea "that the universe was a thermodynamically *closed* system" (Asprem, *Problem* 71) categorically ruled out any possiblity of miracles or divine intervention in the physical world. The emphasis on the first law of thermodynamics thus clearly had the function to separate the field of empirical psychic research from the fraudulent practices and erroneous conclusions of spiritualism, with its outdated pseudo-scientific worldview. On the other hand, the emphasis on the first law of thermodynamics served to generate a new, speculative mode of knowledge in which notions of the afterlife were (re)formulated in terms of energy, waves, radiology or physical processes. As Janet Oppenheim has noted in her analysis of psychic research in the United Kingdom, its activities were concerned with "groping for knowledge that was beyond the scope of physical science either to confirm or to deny" (Oppenheim 159-60). Yet, rather than launching a project of speculative metaphysics it envisioned the expansion of empirical science: "If the tools of physics, chemistry, and biology could not measure and analyze consciousness, whose existence both common sense and empiricism upheld, then physical scientists must expand the scope of their inquiries" (Oppenheim 249). In that sense the community of psychic researchers saw itself in the pioneering role of pushing the boundaries of the natural sciences. By reformulating consciousness in terms of energy Bjarnason's text clearly contributes to a discourse that speaks in the name and terminology of the empirical sciences, yet the problem is that it does so by referring to allegedly material processes that are, as yet, beyond the reach of empirical investigation. What opens up is a rhetorical space that might be described as a space of speculative empiricism.

I have discussed Bjarnason's case in considerable detail because it highlights some of the key questions that need to be dealt with when analysing the correlation of esotericism and the natural sciences in the period under discussion in this volume. The case shows how ideas that are usually traced back to a religious worldview, actually spring forth from within the disenchanted discourse of modern science. In the following discussion I want to make an attempt to address some of the key questions that I see as crucial for an analysis of the links between the natural sciences, esotericism and aesthetic modernity in the early twentieth century. I have chosen to gather these thoughts in a series of methodological observations that might be of heuristic value. The following comments present a series of methodological reflections that revolve around a specific line of questioning that I have developed over the last years as a literary scholar with an interest in the history of aesthetic modernity, Western esotericism and the natural sciences.[11] The following observations or reservations are thus intended as points of orientation, yet to some extent they may also be seen as comments that aim to contest established views of literary history, the history of religion and the history of science.

First Observation: The distinction between proper or genuine science and parascience / pseudo-science is a value-charged one and rarely of heuristic value as a historical category.

Most often this distinction involves an anachronistic perspective, in which pseudo- or parascientific ideas are judged in the light of later developments. As Michael Hagner has noted, "ascriptions" of this kind furthermore come from an outside perspective and are used "in a pejorative sense" to "isolate a certain theory or praxis" and "exclude it from the realm of science" (Hagner 22).[12] As such this mode of exclusion has a kind of *Entlastungsfunktion*, in the sense that it substantiates the status of dominant scientific practices and models as "free of interest and value, and morally inassessible" (Hagner 25).[13] This should not be read as a plea for radical relativism or as a rejection of the necessity of separating between proper scientific conduct and fraudulent practices. It rather stresses the necessity of remaining alert to the ideological, social and epistemological interests that are always at stake when such a distinction is drawn. This is particularly important for historical research, which often tends to turn a blind eye toward the complex interface of scientific ideas on the one hand and parascientific or esoteric ideas on the other. When dealing with a given period it is important to approach the various scientific (including pseudo- and parascientific) theories and models in circulation by analysing their plausibility for different groups within the reading public. A useful methodological framework can be found in Egil Asprem's approach to disenchantment in terms of problem history. As he notes in *The Problem of Disenchantment*, to which this article is heavily indebted, "narratives of the disenchantment process as a *longue durée* in Western history […] run the danger of obscuring the plurality of epistemologial positions available within post-Enlightenment intellectual culture" (Asprem, *Problem* 4). What is needed is a synchronic approach that looks at a set of problems that emerge simultaneously within the disciplines of physics, chemistry, biology and psychology, revolving around notions such as mechanism and teleology, intuition and rational knowledge, vitalism and irrational life force, questions of freedom, will and determinism, as well as the limits of rational knowledge (see Asprem, *Problem* 88, 46). To this list we might add the aesthetic field, considering that the set of problems under debate in the different scientific disciplines also left their mark on aesthetic notions and practices, resulting in redefinitions of artistic praxis, the role of the aesthetic imagination and the epistemological potential of art and intuition. This is of special importance when analysing the avant-garde, with its visions of the artist's role as a seer, prophet, or engineer of a future social order.

Analysing the "plurality of epistemological positions" is not least a crucial task in the period under discussion in this volume, which can be described as a period of scientific crisis. In that context it is useful to revisit Thomas S. Kuhn's description of such periods. A crisis begins when a paradigm no longer holds, and this results in "a proliferation of competing theories that we have previously found to be the concomitant of crisis" (Kuhn 74-75). The crisis lasts until the underlying problems have been solved and a new paradigm is established. Periods of crisis are thus marked by conflicts between various theories and scientific (including pseudo- and parascientific) models. The period from 1890 to 1950 presents one of the most extraordinary periods of such a crisis, as the cornerstones of nineteenth century naturalism were shattering. As Asprem notes, the scientific worldview of "Victorian naturalism" had been erected on the three theoretical pillars of "classical thermodynamics, the Daltonian atomic theory of matter and […] evolutionary theory" – more precisely, Darwin's theory of natural selection – and in the "early decades of the twentieth century, two out of three of these pillars were about to fall" (Asprem, *Problem* 91-92). With new theories in physics and chemistry

and the discovery of radioactivity, the Daltonian "paradigm of stable elements" was superseded by a new paradigm of "mutable and unstable elements", rendering earlier notions of the stability of matter obsolete (Asprem, *Problem* 124).[14] In biology the period from roughly 1890 to the early 1930s, on the other hand, has been described as the "eclipse of Darwinism" (Bowler, *The Eclipse*). The term refers to a period when Darwin's theory was subject to numerous attacks both from biologists and nonspecialists. This marked the beginning of conflicts between different scientific models that can be referred to as neo-Darwinism, Mendelianism, neo-Lamarckism and theories of orthogenesis, until the period of crisis came to an end with the modern synthesis of Darwinism and Mendelian genetics in the 1930s. It is useful to keep in mind Peter J. Bowler's remark, that there is indeed "no single theory of evolution, only an array of rival depictions of how new forms of life originate", whereas alternative models of evolution often tend to be "dismissed as side branches" only of marginal historical value (Bowler, *Evolution* 8, 26). The focus on the plurality of theoretical models is especially relevant when analysing the eclipse of Darwinism, as the criticism of Darwin's theory of natural selection opened up a debate in which notions of teleology re-entered the discussion and this was partly seen as an opening for spiritual and vitalist positions. Of specific importance is neo-Lamarckism with its emphasis on the inheritance of acquired characteristics. As Bowler has explained, the theory of the inheritance of acquired characteristics was based on the persuasion that "organism in the course of its life can be transmitted to future generations," evolution thus becoming "the sum total of individual acts of self-development" (Bowler, *Evolution* 11).[15] Such theories gained a broad following in the early twentieth century "in part because they preserved an element of teleology that countered the apparent materialism of the Darwinian theory" and presented a model of the organism "as an active, creative agent in charge of its own and its species' destiny" (Bowler, *Evolution* 225, 238). Neo-Lamarckian positions were thus quite compatible not only with theories of philosophical vitalism but also with currents of psychic research and theosophical notions of spiritual evolution, as can be seen from the writings of authors as different as Henri Bergson, William McDougall or Annie Besant. Theories of Neo-Lamarckian provenance furthermore presented an attractive model for poets and artists, insofar as they opened up possibilities for an active role of the aesthetic in shaping future generations and society. I would even claim that the idea of the new man, which came to play a central role in the avant-garde's visions of cultural, social and spiritual renewal, only becomes comprehensible against the background of Neo-Lamarckism. As I have pointed out elsewhere it is, for example, no coincidence that Marinetti chose to refer to Lamarckian ideas rather than to Darwin's theory of natural selection when he presented his futurological vision of the "multiplied man" in 1911 (Hjartarson, *Visionen* 239-42; see also Marinetti). The field of evolutionary theory during the eclipse of Darwinism is a prime example of the conflicts of different models within scientific discourse, which demonstrates the limits of an historiographical approach that tends to neglect the various pseudo- or parascientific models in circulation as mere side branches. It is furthermore a good reminder that periods of scientific crisis are not only marked by debates of natural scientists working within an established and hitherto valid paradigm, but also by a vivid dialogue with positions at the margin of or even outside the scientific community.

Second Observation: When dealing with the links between science, esotericism and aesthetic modernity it is crucial to pay as much notice to outdated scientific

models and failed or short-lived paradigms as to theories that have come to endure.

This is especially important in periods of scientific crisis, for two main reasons. Firstly, during such periods, scientists, intellectuals and others (including artists) who contribute to scientific debates increasingly fall back upon older, alternative models in search of solutions, in a sense returning to positions from the time before the collapsing paradigm is seen to have gone astray. Rejected or outdated scientific models thus tend to reenter the scientific debate. Periods of crisis furthermore open up a space for esoteric ideas to reenter the discussion with claims of scientific validity, partly because they are rooted in those outdated scientific models. Such periods are therefore marked by conflicts between various old and new models rooted in both scientific and esoteric or parascientific traditions. As Olav Hammer has noted, "one of the most striking characteristics of the Esoteric Tradition is precisely its use of contemporary science as a source of legitimacy" (Hammer 203). When dealing with science's impact on aesthetic modernity we need to focus not only on dominant models within the natural sciences but also on the broader field of "scientism", which Hammer defines as "the active positioning of one's own claims in relation to the manifestations of any academic scientific discipline, including, but not limited to, the use of technical devices, scientific terminology, mathematical calculations, theories, references and stylistic features – without, however, the use of methods generally approved within the scientific community" (Hammer 206). Yet, rather than sticking to a rigid separation of science and scientism as Hammer proposes, which reaffirms the distinction between science and pseudo- or parascience on another level, I would plead for a broader understanding. Scientism is most properly understood simply as the presentation of one's claims with reference to scientific theories, methods or models, regardless of their factual or scientific merit. Again, this should not be read as a plea for relativism. Some of those scientistic claims are obviously scientifically valid, whereas others are dubious, yet others even outrageous or straight-out nonsensical. The point is that these ideas need to be analysed in terms of their appeal and plausibility for different groups within the reading public, including artistic circles.

Secondly, as noted earlier, periods of crisis see "a proliferation of competing theories" before a new paradigm is established. Literary scholars and art historians often have a limited knowledge of the history of science and esotericism and as a result are often tempted to find in the material analysed only those ideas that they are already familiar with. When evolution is mentioned they see Darwin's theory of natural selection, when they see references to physics they think of quantum mechanics or Einstein's theory of relativity, when the subconscious is mentioned they see Freud. When exploring the historical links between aesthetic modernity and scientific discourse literary scholars and art historians need to expand the corpus of works that they deal with and read those works with the same scrutiny as the canonical works that they already know. To mention just a few names, this might include relevant writings of authors such as William Crookes, Oliver Lodge, Frederic W.H. Myers, Karl von Reichenbach, Albert von Schrenck-Notzing, Carl du Prel, Hans Driesch, Trofim Lysenko, Piotr D. Ouspensky, Julian Ochorowicz, Léon Denis, Allan Kardec, Rudolf Steiner, Charles W. Leadbeater or Annie Besant. Although this list is far from exhaustive, the task may already seem burdensome if not impossible. What I would like to stress, however, is the necessity of thorough philological work, i.e. the importance of tracing and studying those writings that the authors and artists that are the focus of analysis were clearly or most probably acquainted with, regardless of their apparent or obvious eccentricities. This provides new insights into the seemingly messy field of

models that have circulated within scientific discourse at a given time and come to shape the aesthetic visions and practices of artists and poets. This is of particular importance in the case of esotericism. When coming across references to currents such as theosophy, gnosticism, anthroposophy or spiritualism literary scholars and art historians tend to gloss over them as ideas that were *en mode* at the time but have now become historical curiosities. This is a natural response that is rooted in their knowledge and schooling. They have learned more about scientific theories that have come to shape future knowledge than about eccentric theories of the past – and understandably so. The field of esotericism is of particular relevance in this context, because in that case they are confronted with a cluster of currents that has ended up in what Wouter J. Hanegraaff has described as the "dustbin of knowledge" or "'waste-basket category' of exclusion", i.e. theories and epistemological models that have not found their place within academia (Hanegraaff, *Western Esotericism* 127; Hanegraaff, *Esotericism* 254). Esotericism has thus in a sense been bracketed off from the history of modernity, with the result that it has "received remarkably little scholarly attention, possibly because the notion of mysticism and the occult seems to run counter to our conception of modern culture" (Owen 6).

A further point remains to be made, which concerns the traditional view of the history of modern science. As Asprem has noted, it is important that scholars do "not miss the fact that scientists of the 'modern' period have made strategic use of their own history to create a narrative of revolution in which they themselves were inscribed as the avant-garde" (Asprem, *Problem* 103). This remark is obviously of particular interest for scholars of the avant-garde. What is at stake in Asprem's remark is the predominant view of disenchantment, which emphasises cutting-edge research and breakthrough discoveries. The history of science is thus drawn up from a later viewpoint, stressing pioneering works and lines of continuity. This is also a well-known rhetorical device in the historiography of art and literature. It should suffice to note that the aesthetic concept of the avant-garde gains its value in the post-war period as the historical avant-garde movements become important forerunners of those that would follow, thus affirming a grand narrative of the history of modern art and literature in terms of continuity and progress (including its manifold shifts and leaps). I have referred to Asprem's remark in order to address the temptation that scholars of the avant-garde are often confronted with, namely, to link its works to precisely those scientific theories that present the avant-garde of science. Scholars often prefer to see their protagonists of the artistic avant-garde as progressive minds picking up on the latest scientific theories. It is important to keep in mind that this was more often not the case. A demonstrative example would be the scientific writings of the "inventor and Dadaist" (quoted in Burmeister 10)[16] Raoul Hausmann. The first steps toward the scientific project of "optophonetics" ["Optophonetik"], which he would develop further in the 1920s, were taken already in the late 1910s and were based on the pillars of Hanns Hörbiger's "world ice theory" ["Welteislehre"], Ernst Marcus' theory of eccentric perception, Karl Koelsch's theory of waves and finally theories of "ether pressure" ["Ätherdruck"] presented by Johannes Zacharias and Arthur Patschke. As Arndt Niebisch has noted, Hausmann's writings are thus "affiliated with a discourse of science and intellectual theory that today has been written out of the annals of the history of science as obsolete and eccentric" (Niebisch 21).[17] The element that linked these different theories was the emphasis on the ether and indeed Hausmann would hold on to the notion of a "cosmic ether" after it had lost all credibility as a scientific notion, even engaging in a radical polemic against Einstein's theory of relativity as late as 1931, in "Und übrigens, Herr Einstein, wie heizen Sie die Sonne?" ["By the Way, Mr.

Einstein, How do you Heat the Sun?"] (Hausmann 148-65). The scientific publications that served as theoretical pillars for Hausmann's optophonetics were certainly not written by leading scientists within the specific disciplines, but rather by scientists and amateurs who stood "outside or at the margin of the academic field" (Niebisch 55).[18] Yet, I would claim that by engaging in that discourse of popular science these publications contributed to actual debates within the scientific community precisely from that margin, thereby appealing to a broad readership of nonspecialists. The status of those publications, as well as of the theory of the ether, was furthermore fundamentally different in the late 1910 and in the early 1930s (see Hunt). Hausmann's optophonetics can thus be claimed to have drifted from a position at the margin of scientific discourse into the vaster field of the parascientific or the esoteric. A further and more general case in point would be the persistent link that has been drawn between cubism and Einstein's theory of relativity. As Linda D. Henderson has convincingly argued, cubism's notions of space were rooted in theories that were circulating in the context of ether physics at the time and belong to an earlier paradigm ("Modernism"; "Vibratory Modernism"). In fact, Einstein's theory of relativity rarely becomes a point of reference within the discourse of popular science until after 1919. This is a useful reminder of the belatedness of the avant-garde in scientific terms.

Third Observation: As a rule, artists and poets gather their knowledge of scientific theories from popular science, which is rarely up-to-date with the latest scientific discoveries.

Popular science here refers to "all written forms of science popularization", i.e. "any science-related communication directed at nonspecialist audiences" or written by an author outside of the respective scientific discipline (Tinker Perrault xiii).[19] In this broad sense the term refers to a great variety of writings that clearly call for a closer analysis in each case. Yet, my point is that as a rule poets and artists are not scientists and they gather their knowledge in popular publications (in some cases even through casual conversations with friends and colleagues) rather than by delving into the latest specialist writings. Two points need to be underlined. Firstly, it is important to keep in mind that discussions within popular science tend to lag behind the latest scientific discoveries. Leading authorities within popular science are often scientists of the older generation, whose authority is based on reputation and works of the past, but they are often no longer active in laboratory experiments (see Bowler, *Reconciling* 1-24). As a result, older paradigms tend to prevail longer within the discourse of popular science. Two cases in point would be the writings of Oliver Lodge and Hans Driesch. After Lodge's turn to spiritualism, as he faced a growing critique from both physicists and fellow psychic researchers, he remained active as a populariser of modern physics and continued to play an important role as a scientific authority in the eyes of large sections of the reading public. In that context he held on to the theory of the ether as a core element of his worldview well into the 1930s, when the concept had become completely obsolete within modern physics (Lodge; see also Asprem, "Pondering" 141-42). Driesch's vitalist theory of *entelechy* had become more or less untenable within embryology already around 1910, yet instead of adapting to a new model he chose to stick to his theory and develop it further in the context of philosophical vitalism and parapsychology, where he found an appreciative audience (see Asprem, *Problem* 164-65). These two cases also reveal the complexities that scholars are confronted with when they attempt to assess notions of authority within esoteric discourse. Whereas the impact of Lodge's and Driesch's writings was partly based on their earlier scientific work and thus on a traditional notion of scientific authority in the sense of knowledge

acquired by means of verifiable experiments, within the discourse of esotericism their works were increasingly linked with spiritual notions of authority, stressing their role as mediators of a perennial tradition or as works presenting a higher mode of knowledge.[20] The authority of their writings was thus simultaneously linked to their role as leading scientists and as spiritual sages, these two roles often being instrinsically linked.

The second point is that within popular science new theories and models are discussed, mediated and reconceptualised from an outside perspective. As Bowler has noted, popular science not only offers a platform for scientists and other authors to "influence the public image of science in a way that the scientific community as a whole might not want to endorse", but also provides a "battleground both for rival ideologies and rival worldviews" (Bowler, *Science* 24). Popular science thus serves as a mediating discourse between scientific theories on the one hand and metaphysical, religious and aesthetic positions on the other. As a rule, artists and poets thus gather their knowledge of scientific theories from secondary models, in which these theories have already been adapted to a discussion of metaphysical, religious or aesthetic standpoints. It is, in other words, not least within the realm of popular science that new discoveries gain their broader value for cultural and social debates. This is of particular importance when it comes to modern esotericism, because esoteric publications have often served as important platforms of popular science, providing information on the latest scientific theories, discussing their metaphysical or spiritual relevance. It should not be forgotten that poets and artists have partly gained their insight into the latest scientific discoveries through the lens of esotericism. In this regard it is furthermore important that currents such as theosophy, spiritualism or psychic research, with their scientistic claims, were developed in dialogue with the latest discoveries of the natural sciences in the late nineteenth century. Key concepts were terms such as the ether and the fourth dimension, which would gradually lose their hold in the upcoming period of scientific crisis (see Henderson, *Fourth Dimension*). Yet, both these concepts remained important points of reference within esotericism, whereas they had drifted from presenting acceptable or at least debatable scientific concepts to becoming remnants of an obsolete paradigm. These concepts are a good example of the fact that outdated scientific theories tend to gain a kind of afterlife in esotericism as well as in art and literature. It should furthermore be stressed that the rejection of the respective theories not merely presents a weak spot in terms of scientific veracity but may even serve to strengthen their value. Within a counter-cultural milieu such as occultism or the avant-garde, with its roots in nineteenth-century bohemianism (see Seigel; Cottington), rejected or forbidden knowledge partly gains relevance as an element of anti-establishment attitudes.[21] To put it shortly: precisely because those theories or models are rejected they gain a specific value as epistemological, scientific or aesthetic countermodels. This can be seen as an example of the dialectics of stigmatisation and charismatic value described by Gabriela Wacker, as the stigmatisation becomes a crucial element in gaining a charismatic status within the counter-cultural milieu (Wacker 80-88; see further Lipp). This is a good reminder of the fact that the belatedness of the avant-garde in scientific terms is often peculiarly persistent.

Fourth Observation: When analysing the links between science and parascience or esotericism it is crucial to keep in mind that within the discourse of popular science the dividing line between these two is in a sense permeable.

The currents traditionally referred to as esotericism were not simply irrationalist, anti-scientific or pseudo-scientific responses to rationalization. The process of

disenchantment and the various calls for reenchantment can not be properly understood as a struggle between the progress of science, rationality and modernity on the one hand and remnants of a religious or spiritual worldview on the other. It may be good to keep Richard Jenkins' words in mind, that "since Weber first discussed these issues, it has become increasingly obvious that disenchantment has, at best, proceeded unevenly, and, at worst, not at all" (Jenkins 12). Weber's influential lecture on disenchantment from 1917, which was presented in Munich at a time when the city had gained the status of a "stronghold of German occultism and spiritualism" (Pytlik 142), brought up key questions that had shaped discussions of epistemology after Kant. Weber's categorical distinction between fact and value, which resulted in the separation of science and religion, was but the latest contribution to the post-Kantian discussion of the distinction between the immanent, the transcendent and the transcendental. From Weber's point of view religion as such would continue to exist within a disenchanted society, yet it would lose its claims to scientific validity. What was at stake was thus not religion as such but the scientific or factual capacity of religious discourse, those aspects of the spiritual that are linked to magic, superstition and polytheism. As Asprem has noted, Weber's theory of disenchantment thus "saves 'pure religion' while disqualifiying 'magic'", whereas "[n]aturalism finds 'pure religion' inconsequential and possibly nonsensical, while holding the door open for 'magic'", and "[i]t is in the middle of these tensions that the problem of disenchantment arises" (Asprem, *Problem* 79; see further Hanegraaff, *Esotericism* 252-56).

Many intellectuals who responded critically to the disenchanted worldview did so precisely in the name of scientific naturalism. The clearest example is psychic research, which was not driven by a religious fervour but by a radical mode of scientific optimism. What was rejected was not the project of the natural sciences but the categorical bracketing of the transcendent as the realm of the unknowable. The scope of empirical science was broadened, bringing in the realm of the transcendent or the paranormal (see Kripal). A demonstrative example are the writings of the psychic researcher William McDougall, for whom the boundaries of scientific knowledge were not to be drawn a priori by declaring the paranormal out of reach, but rather to be explored and tested by empirical research. His critique was thus directed against what he saw as a mode of "dogmatic agnosticism […] which does not content itself with the frank and humble avowal that we do not know, but which presumes to assert that we cannot know" (McDougall 71). In similar terms Myers would reject the term "supernatural", which he claimed was "open to grave objections" because it "assumes that there is something outside nature" and has therefore been "associated with arbitrary interference with law" (Myers xi). Instead, he chose to speak of the "supernormal", because he saw "no reason to suppose that the psychical phenomena with which we deal are less a part of nature, or less subject to fixed and definite law, than any other phenomena" (Myers xii). This radical critique of the agnostic principle can be seen as a shift of the paranormal or supernatural from the "unexplainable" toward "the as of yet explained" (Asprem, *Problem* 303). Such claims of broadening the scope of science or founding a higher science took on different shapes within various currents of esotericism. By insisting on the possibility of gaining access to the transcendent or opening pathways for its entry into the immanent world a space of speculative knowledge production was opened up, in which questions of metaphysics and religion could be discussed in terms of the new natural sciences.

Such trends can be traced back to the tradition that Monika Fick has defined as psychophysical monism and linked to romantic notions of the unconscious. Of specific importance in that context are the writings of Gustav Theodor Fechner with their notion

of a spiritual dimension inherent to matter, which redefines "spirituality" and "sensuality" ["Spiritualität und Sinnlichkeit"] as two interrelated realms within the empirical world and "grasps the spiritual in sensual terms" (Fick 7).[22] This is of particular relevance for the aesthetic, insofar as the field of speculative knowledge production that thereby opens up provides a platform for the participation of poets and artists in the role of seers, prophets or harbingers of a new scientific and aesthetic outlook. What was at stake in the early twentieth century was the epistemological validity of aesthetic discourse, its qualification to provide empirically relevant knowledge and not mere metaphysical, spiritual or aesthetic speculation. A specific worldview emerged that can be described as characteristic of aesthetic modernity, which "supplants scientific knowledge from its role as the leading instance of knowledge and replaces it with an emphasis on the aesthetic experience of the subject" (Pauen 15). As Michael Pauen has shown this mode of thinking can be traced back to the impact of gnostic ideas in the formative period of aesthetic modernity in the nineteenth century, not least in the context of French symbolism. The aesthetic imagination was seen as a specific epistemological medium, capable of generating or mediating an alternative mode of knowledge by means of intuition or revelation, which could not be communicated by rational means but only hinted at through symbolic language, providing insights and revealing hidden correspondences. Such positions partly resulted in antiscientific positions that took a radical stance against the scientific worldview, yet they also opened up a new space of speculative knowledge production in which scientific, parascientific, esoteric and aesthetic models of the empirical world were interwoven in complex ways. Within the aesthetic discourse of modernity the idea of gnosis, with its implications of a higher mode of knowledge, partly has an esoteric and spiritual, partly a scientific or parascientific character. In this context it is worth bearing Sabine Flach's pointed remark in mind, that "the process of abstraction as dematerialisation of artistic production is on the one hand linked to developments in the natural and technical sciences", on the other it is related to "studies of occult, parapsychological and theosophical phenomena" (Flach 49).[23] What was at stake was the shaping of an alternative epistemological model of the aesthetic and the redefinition of the links between religion, spirituality, science and the aesthetic. When Hugo Ball makes the memorable claim, in his memoirs from 1927, that "modern artists are gnostics" (Ball 101), we should see this less as a symptomatic expression of his own eccentric worldview than simply as a description of the state of arts in the early twentieth century. What many of the artists of the avant-garde were striving for was a new, alternative model of knowledge production that remained open to various frictions and affiliations with the empirical sciences.

From another perspective this is also a good reminder that modern esotericism can not be restricted to a religious or spiritual worldview in which "the underlying motivation is primarily religious, in the sense of a deep concern with the true meaning of life and the ultimate spiritual destiny of human beings in the universe" (Hanegraaff *Western Esotericism* 69). Modern esotericism should not be understood simply as a reenactment of spiritual positions that had been formulated within early or pre-modern models and paradigms such as hermeticism, gnosticism, magic or alchemy, as is often the case within the scholarship of Western Esotericism that has taken shape against the background of religious studies. Such an approach, which tends to trace modern esotericism back to earlier currents in the history of religion, risks overlooking the specific modes of esoteric knowledge production that emerge from within the discourse of the natural sciences in the period of modernity, as a response to new scientific models and theories. To put it briefly: modern esotericism is as much a product of the empirical

sciences as of traditional religious or spiritual currents of esotericism. A more fruitful approach can be found in Andreas B. Kilcher's understanding of esotericism as "an epistemological phenomenon", which sees it as a "fluid product of discourses and interpretations" that stands in a complex "dialectical relation to exoteric […] knowledge" both within the realm of institutionalised religion and science (Kilcher 143; see also Erdbeer 2016). As a mode of counter-knowledge the currents of esotericism that emerge in modernity primarily position themselves against those models of the empirical sciences that have come to present the dominant mode of exoteric knowledge production in secularised societies. In this sense, an analysis of the links between aesthetic modernity, science and esotericism needs to focus on the complex interrelations between religious or spiritual world views on the one hand and scientific or parascientific models on the other. What I am pleading for here is a broader notion of esotericism that sees it as a mode of speculative counter-knowledge that emerges both within religious and scientific discourse – and not least at their intersection.

Fifth Observation: Esotericism was not an isolated or restricted field in the period under discussion and needs to be seen as an integral element of the aesthetic discourse of modernity.

Whereas the role of esoteric currents in the early twentieth century is well known, the general tendency has been to link them to the works of a restricted number of artists and poets with a keen interest in esoteric ideas and doctrines. The importance of esotericism is thus linked to a limited number of initiates in the belief that they are most properly dealt with in individual case studies. As a result, we have a number of illuminating monographs and articles dealing with esoteric ideas in the works of artists such as (to mention just a few of the relevant cases) Vassily Kandinsky, Piet Mondrian, Mikhail Matyushin, Hugo Ball, Velimir Khlebnikov or Hilma af Klint, whereas esotericism's more general impact on the avant-garde and its aesthetic project is more often ignored. As I have pointed out elsewhere the works of these artists have thus "come to serve as an alibi in the history of modern art and literature," in the sense that the role of esotericism is thereby restricted to the works of a "small number of artists working explicitly with such ideas." The role of esotericism is furthermore seen as an element of the cultural background that remained without an impact on the aesthetic characteristics of the works, which closes the discussion (see Hjartarson "Ghosts" 147). This emphasis has served as an effective way to acknowledge the importance of esotericism without actually having to deal with it, that laborious effort can be left to those specialists who thankfully enough insist on studying it. Against that view I would claim that esotericism needs to be seen as an integral element of the aesthetic discourse of modernity, which has shaped its development and various manifestations in significant ways. To put it succinctly; the works and aesthetic practices of the avant-garde (and modernism more broadly) cannot be properly understood without considering the role of esotericism. A useful tool for rethinking the role of esotericism or occultism from a broader perspective is the concept of occulture. As Christopher Partridge has noted there are "of course, occult traditions and organizations that are styled as such, concerned with the cultivation of a sense of gnostic privilege," yet in the period of modernity "the culture in which they are embedded is no longer hidden or unfamiliar" (Partridge 113). Partridge's remark that "occulture is ordinary" shifts the perspective on esotericism, which can be seen with Nina Kokkinen not as a restricted or "clearly defined system of belief or set of certain currents" but rather as "a constantly evolving field of discourses and practices into which various different cultural products, scientific inventions, political ideologies and natural phenomena are absorbed"

(Kokkinen 31). To Kokkinen's remark it should be added that occulture not only presents a field in which various currents are absorbed but also a field which in its own turn is absorbed into other fields and discursive practices. When assessing the impact of esoteric ideas, we need to focus simultaneously on how these ideas circulated and were mediated through aesthetic, philosophical, scientific and parascientific writings as well as on their role in mediating aesthetic, philosophical, scientific and parascientific models and concepts. From that perspective the concept of occulture can provide significant insights into the complex interlocking of religious, aesthetic, scientific and parascientific models within modern esotericism, as well as into esotericism's formative role in the period of cultural and aesthetic modernity. As such it may provide one of the tools that are essential to future explorations of the avant-garde and its contribution to the captivating entanglements of esotericism, science and parascience.

Notes

1. "Hvernig fer þá um hana, þegar maðurinn deyr og heili hans leystist algerlega í sundur?" All translations of citations in this article are by the author, unless noted otherwise.

2. "Eftir þeirri þekkingu, sem vér nú höfum, eru mestar líkur til, að sálarlífið leysist í sundur með líkamamanum [sic!] og að meðvitundarlífið sé því svo að segja samgróið líkamslífi voru."

3. "En hver segir, að þeirri þekkingu sé ekki í einhverju ábótavant? Hver getur fullyrt á þessum tímum, þar sem vísindin eru að uppgötva nýja heima ósýnilegra afla eins og t.d. allar þær geislategundir, sem nú eru að koma í ljós, – að ekki verði eitthvað eftir þegar líkaminn deyr og leysist í sundur, þó ekki sé nema ákveðin ölduhreyfing, er geti haldið áfram að lifa lífinu útaf fyrir sig, þótt líkaminn deyi."

4. "Það er hollast að fullyrða ekki neitt hvorki til né frá um þetta, meðan mannsandinn er enn ekki búinn að stafa sig fram úr helztu ráðgátunum er að því lúta."

5. "Eins og hver lítil ljóssveifla, segir hann, berst um alla alheimsvíðáttuna áður en hún lýkur starfi sínu, eins má ætla, að ljósvakasveiflur þær, er kunna að vera samfara sálarlífi mannsins, geti og borist um heim allan og náð þar takmarki sínu og fullkomnun, þó líkaminn deyi og leysist í sundur."

6. The most detailed discussion of Bjarnason's career and philosophy can be found in Rúnarsson (31-84).

7. "Þó skal bent á eina hugðnæma hugsun, er hinni mikli þýzki eðlisfræðingur Helmholtz drap á í þessu sambandi."

8. "[A]ð ekkert afl náttúrunnar verði að engu, heldur breytist öflin hvað í annað […]". „Því ekkert ferst í heimi þessum og ekkert verður að engu."

9. Bjarnason's most extensive critique of spiritualism was presented in a lecture that appeared in the same year as his book on the nineteenth century (*Andatrúin krufin* [Spiritualism Dissected])

10. "Fjarvísi"; "farskygni"; "fjarskygni"; "hughrif"; "fjarhrif". "[H]inar fíngervustu ljósvakaöldur, er berist frá manni til manns og veki hjá þeim sviplíkt sálarástand." For a detailed analysis of this "first parapsychological study" published in Iceland, see B. Bjarnason, "Drauma-Jói."

11. Many of the theoretical and methodological insights presented in this article derive from an earlier study of mine in Icelandic, which focused on the biocosmology of the Icelandic geologist and esotericist Helgi Pjeturss ("Magnan af annarlegu viti").

12. "Eine solche Zuschreibung nehmen immer nur die anderen vor, und zwar in pejorativer Absicht, um eine bestimmte Lehre oder Praxis zu isolieren, sie aus dem wissenschaftlichen Bezirk auszugrenzen."

13. "[E]ine Entlastungsfunktion für die Wissenschaften selbst, die sich damit weiterhin als interessenlos, wertfrei und moralisch nicht beurteilbar darstellen konnten."

14. On the links between esotericism, science and popular science in the early twentieth century, see Morrisson.

15. On the impact of Neo-Lamarckism within the aesthetic field, see Brauer.

16. The description of Hausmann as "Erfinder und Dadaist" is taken from August Sander's *Menschen des 20. Jahrhunderts* from 1925.

17. "Das Schwierige und Eigentümliche dieser Texte liegt darin, dass sie an einen wissenschaftlichen und ideengeschichtlichen Diskurs anschließen, der heute als obsolet und versponnen aus den Annalen der Wissenschaftsgeschichte gestrichen ist."

18. "[A]ußerhalb oder doch am Rande des universitären Betriebs."

19. On the important historical role of "popular science" as an epistemological and ideological tool that has served to draw demarcation lines between proper science and popularisation, see Bensaude-Vincent.

20. On these different modes of authority and discursive strategies, see Hammer (22-25).

21. Occultism is here understood as describing the status of esotericism under the conditions of modernity, as "the esoteric has become a speculative counter-knowledge against the modern knowledge understood as based on rationality, empirical proof and instrumental applicability" (Kilcher 148).

22. "[I]n dem das Geistige sensualistisch gefaßt wird."

23. "Dieser Prozess der Abstraktion als Dematerialisation in der künstlerischen Produktion verbindet sich einerseits mit Entwicklungen in den Natur- und Technikwissenschaften. Andererseits bildet Dematerialisation die Schnittstelle hin zur Legitimierung einer Beschäftigung mit okkulten, parapsychologischen und theosophischen Phänomenen."

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