

Paradigm Explorer



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Creativity and
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The Scientific &
Medical Network

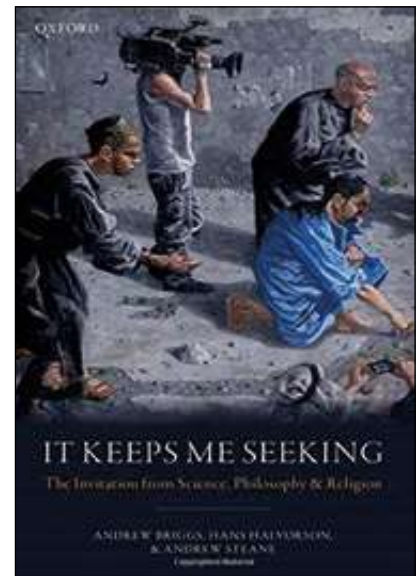
also manifesting as frustration and failure, *incubation*, followed by *illumination* then *verification* and *arrival* in terms of the final work. The rich narratives throughout the book vividly illustrate the detail of this unfolding process, for instance in close-readings involving Schumann's *Konzertstück* for Horns and Orchestra and the fluctuation-dissipation theorem. This particular chapter on creating the sublime concludes that 'both music and mathematics illuminate wordless spaces within the human mind.... and have given witness to the deep role of aesthetics at every point of their creative journeys.' (p. 260) We also learn about Schumann's study of mathematical harmony in Bach while at the same time he is reading the romantic literature of John Paul Richter.

In his chapter on Seeing the Unseen, the author points out that the act of visual perception rests upon the act of visual imagination, and these in turn are predicated on neural and perceptual processes embedded in the human body. He discusses complementary extramissive and intromissive understandings of perception corresponding to active intentionality and passive receptivity, both of which are required in the creative process. In this respect, he could have brought in the scientific work of Goethe in more detail as he not only activated both observation and contemplation, detachment and immersion, but also spoke of new organs of perception required for creative advance. The author rightly observes, though, that 'the thought process is continually in tension between the representation and the thing represented.' (p. 83) This involves 'both projection of imagination onto the world, and reception of impressions from it, that are interpreted through the structures of our inner, mental world.' (p. 85) Later in the chapter, he applies this to cosmological models as they have evolved through history; the models involve imaginative and inductive recreation. Not only do we think as we see, we also see as we think, in accordance with prior mental frames that condition what William James called apperception - the appropriation of the new into our overall scheme of knowledge.

Experimental Science and the Art of the Novel uses texts from William Beveridge - *The Art of Scientific Investigation* and Henry James's *The Art of the Novel*. In both modes of experiment and fiction we do not necessarily know the outcome in advance, but must have confidence in our creative skill and ability. The author conducts a fascinating

exploration of the 'orbits' of the early novel and science, discussing Robinson Crusoe, Newton, Milton and Boyle. A further parallel is indicated by Beveridge when he writes that 'scientific research is not itself a science; it is still an art or craft.' This and other passages put me in mind of the philosopher of science Gerald Holton's distinction between what he calls Science 1 and Science 2, where the first is the actual lived process and the second (usually third person) report lending a certain detachment and objectivity not necessarily present in the actual experience of the experimental scientist. This chapter contains more reflection on the phases of incubation and illumination, along with a fascinating account of the work the novelist Vladimir Nabokov on butterflies, where his morphological comparisons gave rise to a migration theory only confirmed 60 years later by modern genetic analysis.

The chapter on emotion and reason draws on a variety of historical and contemporary sources, explaining the mediaeval distinction between *aspectus* as intellectual apprehension and *affectus* as will or desire. There is an appreciative commentary on the work of Iain McGilchrist and a discussion of the significance of the work of Hume, Spinoza, Humboldt, Bohm and finally of Picasso's *Guernica* as a powerful artistic and emotional statement. As the author puts it at the beginning of his final chapter, 'at every turn we have found the process of creation to draw on the deepest human energies, most radical thought, and most powerful emotion. Hope, desire, cognition, vision, dreaming, craft, skill, expertise, and passion are all summoned in the task of conceiving and realising our imagination.' (p. 301) His foregoing analysis amply supports his thesis and he also returns to the theme of his earlier book *Faith and Wisdom in Science* by reminding us that wisdom and understanding are the ends of all human artistic and scientific endeavour, and that while visual perception tends to create distance, hearing is immersive [T.S. Eliot - *we are the music while the music lasts*]. The major achievement of this landmark study lies in its demonstration of the common sources of creativity in the sciences and the arts and therefore its contribution to healing our cultural rift and creating a harmonious balance between heart and head, emotion and reason, intuition and analysis: we need both in order to be fully human.



MUTUAL ENRICHMENT

David Lorimer

■ IT KEEPS ME SEEKING

Andrew Briggs, Hans Halvorson and Andrew Steane

Oxford, 2018, 360 pp., \$25.95, h/b - ISBN 978-0-19-880828-2

This rigorous and wide-ranging discussion of central issues at the interface between science, philosophy and religion reflects the formidable intelligence and insight of the joint authors, respectively Professor of Nanomaterials at Oxford, Professor of Philosophy at Princeton and Professor of Physics at Oxford. They are all committed Christians dedicated to grappling fully with the complexities and subtleties of hard problems in all three fields. There are four key themes running through the book: God as a being to be known, not a hypothesis to be tested; the setting of a high bar on what constitutes good argument; the view that uncertainty is okay; and that we have permission to open up the window offered by the natural world in order to see more deeply into it on the basis that it gestures beyond itself to what we experience inwardly in our lives. Evidence and reason are esteemed throughout the book, and the authors note the implications of the mathematical harmony of the natural world, which they regard as 'freighted with meaning' in contrast to the atheistic outlook, unpicking the equating of rationality with this view.

They take Richard Dawkins to task in a number of respects, presenting as he does the evolutionary process as an argument for atheism. The authors regard this approach as a misconceived category error, and reject the idea that God should be

The Scientific and Medical Network is a leading international forum for people engaged in creating a new worldview for the 21st century. The Network brings together scientists, doctors, psychologists, engineers, philosophers, complementary practitioners and other professionals. The Network is an educational charity which was founded in 1973.

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