

Book Review¹

McShane, Philip, *Randomness, Statistics, and Emergence* (2021) (2nd ed.). Vancouver: Axial Publishing. 291 pp. Edited by James Duffy and Terrance Quinn. ISBN-10:1988457084; ISBN-13: 978-1988457086.

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By 1965, reflection on the significance of statistical results in science generally, and in theories of evolution in particular, was already an established zone in the philosophical literature. Topics included, for example, randomness, probability, chance, speciation, development, and the relation of statistical methods to more “classical style” work. It was into this context that McShane penned and delivered his doctoral thesis.² In 1970, the original manuscript of his thesis was published as a book, *Randomness, Statistics and Emergence*.³ Over the past 51 years, literature in philosophy of science has expanded enormously and become increasingly sophisticated. And so, gone are the days when frontline philosophers of science can debate, for example, general notions such as “cause,” “effect,” and “imminence.” Today’s philosophy of science includes sophisticated models and mathematics, tailored to questions that have arisen regarding quantum science and modern biology. However, despite that increasing sophistication, certain essential features of the field have not changed, in the sense that models are conceptual and speculative. And, globally, there are no signs of an emerging consensus regarding the relationship between classical and statistical methods, the meaning of randomness, or the nature of emergence.

The second edition of *RSE* provides a potential resource for helping contemporary and, indeed, future scholars get to the roots of these issues. *RSE* also has a further goal. As McShane wrote in the original preface, the “book might well have been subtitled *Towards an Adequate*

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² The title of the thesis was “The Concrete Logic of Discovery of Statistical Science, with Special Reference to Problems of Evolution Theory.”

³ Dublin and London, Gill and Macmillan and Macmillan, 1970. The original manuscript included what is chapter 8 of the book. This chapter was not included in the thesis McShane defended because his readers considered it to be merely pure mathematics. He recalls this in the preface to the second edition, *Randomness, Statistics, and Emergence*, 2nd ed., (Vancouver: Axial Publishing, 2021), liv–lv. [hereafter cited as *RSE*].

Weltanschauung.”⁴ Hoping that a second edition might eventually appear, in 2012 McShane wrote a second preface, which is included in the second edition. The second edition also has an editors’ introduction, comments on which I leave to the end of this review. The editors have added references to the Collected Works of Bernard Lonergan corresponding to works cited in the first edition of *RSE*. They have also revised and standardized citations throughout. Over the years, there were numerous inquiries made to McShane about how to obtain hardcopies of *RSE*. However, other than appearing in some university libraries, the book has not been easily available. The second edition meets that need.

In twelve chapters, with attention to detail, McShane climbs to a modern heuristics of world process.⁵ Working within modern science and philosophy of science, he identifies positive aspects of various main views. But he also sheds light on a range of mistaken notions. For instance, he challenges Hanson’s view that a logic of discovery is not possible.⁶ Of course, one must grow to understand what McShane means by “logic of discovery.” It is developed throughout the book by appealing to experience in science. Hanson’s view, by contrast, is conceptual and not consistent with experience in science. Although, to get a hold of these results requires “self-attention in the process of doing the relevant [modern] sciences.”⁷ A central message of the book is the need and possibility of “generalized empirical method” in science and philosophy of science. McShane takes this up explicitly in chapter nine, “Randomness and Emergence,” and continues the discussion in chapter twelve, “The Conclusions and the Method.” And so, McShane speaks of a “logic of discovery and [observes that] the entire work may be regarded as an experiment in that logic, in methodology, heuristics, in prescriptive metaphysics.”⁸

Note that the main results obtained in *RSE* are not comparable to views and models from mainstream philosophy of science. This may seem surprising. But taking Lonergan’s counsel from *Insight*, the text pushes the reader to make progress in answering the question “What is science?” not through philosophical debate but by consistently adverting to experience. In particular, then, as is evident in scientific practice, there are verifiable differences between *description* and

⁴ McShane, *RSE*, lxiv.

⁵ McShane, *RSE*, 29.

⁶ N.R. Hanson, “The Idea of a Logic of Discovery,” *Dialogues* IV, (1965–66): 49.

⁷ McShane, *RSE*, 212.

⁸ McShane, *RSE*, 1.

explanation. The need for clarity in distinguishing these modes of thought and expression remains a contemporary problem. In my own research, I have found that inadvertent combinations of description and common sense in philosophical reflection about explanatory neuroscience have been contributing to ongoing confusion.⁹ But coming back to *RSE*, McShane brings the challenge to a head with a deceptively simple description of an instance of the problem.

Consider the problem of understanding the amoeba. That problem can be posed in two ways, depending on the state of development of the sciences or the particular scientist's understanding. At an initial stage one may observe the amoeba, an observation which can be refined through the development of various techniques and microscopes. In this case there can be understanding-sensing being an instance of the pair form-matter. But one can also approach the problem of understanding the amoeba against the background of physics and chemistry that we discussed in chapter nine. Most evidently, this advance into physics and chemistry represents a movement from description to scientific explanation. But what is important in the present context is the cognitional difference which corresponds to a transition from sensible presentation to symbolic representation. Thus a cart wheel or the sketch of a round plane curve can lead to the question, Why is this round?¹⁰

McShane claims that “the world view that should emerge – in the reading subject – is the world view of *Critical Existentialism*, a view which originated with Bernard Lonergan.”¹¹ I need to agree. In my own growth with the book, I have found *RSE* to be continuous with the method of Bernard Lonergan. Among other things, it adds instances and details as called for in the last paragraphs of chapter one of *Insight*, where, for instance, Lonergan speaks of the need for self-attention in “the full development of a science or group of allied sciences.”¹² However, to communicate the need and possibility of “self-exposure,” *RSE* employs an advanced pedagogy not found in *Insight* throughout much of the text.

A few words on Quinn's introduction are in order which, coincidentally and not inappropriately, is fifty-one pages, as though for fifty-one years since *RSE* was first published. A “main difficulty

⁹ Robert Henman, *Global Collaboration: Neuroscience as Paradigmatic* (Vancouver: Axial Publishing, 2016).

¹⁰ McShane, *RSE*, 207.

¹¹ McShane, *RSE*, lxiv.

¹² Bernard Lonergan, *Insight: A Study of Human Understanding*, eds. Frederick Crowe and Robert M. Doran, vol. 3 of *Collected Works of Bernard Lonergan* (Toronto: University of Toronto Press, 1992), 55.

is that the method employed to write the book, [RSE] and the method required to read it, are discontinuous with the ethos of modern philosophy of science.”¹³ In the introduction, Quinn begins by providing an account of his own first readings of *RSE*. He follows with some historical context regarding the modest literature on *RSE* since it was first published. He then draws attention to some highlights in the book. As Quinn points out, this is not meant to be a “summary” but is by way of invitation and motivation to read the book. In the final section of the editors’ introduction, he discusses possibilities “beyond 2020.”¹⁴ There, Quinn makes progress toward working out various issues consequent to a question that naturally arises: “What will follow from implementation of the method and results obtained in *RSE*?” He provides detailed examples that will help readers begin to understand how it is that for “schemes of recurrence” (including human history), as determined by concrete circumstances, empirical probabilities of emergence “will be something like a jump in probability from the product to the sum of the particular probabilities.”¹⁵ In the conclusion of the editors’ introduction Quinn then looks to probabilities (both kinds) of emergence of generalized empirical method and functional collaboration.

As the reader will have noticed, I call attention to parts of the journey but do not attempt to summarize either McShane’s chapters or Quinn’s introduction. That is because I concur with the author and apply the same standards to *RSE*:

[S]ummary can give the impression of capturing the essence of a position. But a summary expresses the essence only in so far as the summarizer has the essence of the position in [their] mind. In this respect one may note that the book [RSE] is a summary expression of a philosophic position. As such it provides a phantasm for the reader which requires elaborate supplementation if the reader is to reach the mind of the author.¹⁶

That there are, in some sense, challenges involved in reading the book is suggested by the fact that so far it has largely been ignored by the philosophic and scientific communities, as well as by scholars interested in Lonergan’s work. However, that is more a reflection of “the time” rather than the book. What I mean is that, not unlike *Insight*, *RSE* is ahead of its time. The (existential) gap is partly one of method and partly one of content. This not a speculative matter. And so,

¹³ Quinn, Editors’ Introduction, *RSE*, i.

¹⁴ Quinn, Editors’ Introduction, *RSE*, xxxiii.

¹⁵ McShane, *RSE*, 207. Lonergan hinted at this heuristics in *Insight*, CWL 3, 144.

¹⁶ McShane, *RSE*, lxiv.

McShane observes that “in so far as one is a serious thinker, claiming an adequate viewpoint, a central element in that viewpoint is one’s thought on the relationship of chemistry to botany. Without that thought one lacks a basic component for the conception of world process.”¹⁷

As I hinted at the beginning of this review, however, contemporary philosophical traditions remain what I might call “doubly non-empirical.” The literature is dominated by non-verifiable speculative models and the dominant ethos also does not promote “self-attention.”¹⁸ On the other hand, while modern science is in some respects “conspicuously empirical,” core experience of investigators is either not adverted to or is considered inadmissible. On what grounds can data of consciousness be ignored? Is it by sufficiently attending to one’s experience? What is needed in the academic community, then, are series of communications that would help the scientific and philosophic communities bridge these gaps. Works are needed that will promote growth in scientific understanding within philosophic traditions and that for both philosophy and science will help scholars attend to inquiry, expression, and deliberation in scientific contexts. However, actual contexts are exceedingly complex. As McShane indicates in his second preface,¹⁹ and as Quinn points to in the editors’ introduction, for such efforts to be effective, the later discovery of Lonergan – a cyclic global division of labor – also will be needed. That topic, however, goes well beyond the context of this brief review.

With these caveats in mind, it remains that *RSE* is a beacon of hope. For readers with a scientific background and who are willing to enter into the experiment of self-attention, it will help in the climb toward a modern practical heuristics and worldview. For readers who disagree with claims made in the book, the challenge will be to determine where the author went wrong or where results were incomplete. (The same can be said regarding fundamental disagreements with results found in *Insight*.) Since the method employed is one of scientific self-attention in scientific contexts, traditional philosophical debate will not do. One needs to acquire the relevant data. And that data is only obtained by entering appropriate scientific contexts and employing the method of self-attention.

¹⁷ McShane, *RSE*, lxiv.

¹⁸ McShane, *RSE*, 215.

¹⁹ McShane, *RSE*, lx.

It has now been fifty-one years since *RSE* was originally published. The second edition provides a second opportunity for academic communities to take advantage of this remarkable book. It seems fitting to end this review with McShane's words from the second preface, words that I now also take as my own. "So, I arrive at the place of such works as *Randomness, Statistics, and Emergence* in the gradual acquisition of an aesthetic-toned²⁰ knowledge of our 21st century's need to start over."²¹

Over a career that spans more than 35 years, Robert Henman has applied Bernard Lonergan's thought in courses in Philosophy, Ethics, Medical Ethics (Dalhousie Medical School), Family Studies, Education, and Child Studies at Mount St. Vincent University, Halifax, Canada. He is the author of *The Child as Quest* (1984), *Global Collaboration: Neuroscience as Paradigmatic* (2016), and *Reorienting Education and the Social Sciences: Transitioning Towards the Positive Anthropocene* (2019). He has published peer-reviewed articles in philosophy, ethics, neuroscience, and peace studies. He is married to Olive Dewan-Henman and lives in Halifax, Nova Scotia, Canada. <http://www.roberthenman.com/Default.aspx>.

²⁰ See Philip McShane, "Aesthetic Loneliness as the Heart of Science," *Journal of Macrodynamic Analysis* 6 (2011): 51–84.

²¹ McShane, *RSE*, lx.