

## *Joistings 2*

### *Insight* and *Method*: Beginners' Books?

#### 2.1 Contexts of the Question

I have been dealing with this questions in various ways for more than forty years, so I keep this contextualization as brief as possible with the help of strategic footnotes.

There is the obvious context and place of the question in these early *Joistings*. There is the context, too, of its relation to the Joistings that are to follow, which are intended to respond to questions and problems raised by people struggling in the “application”<sup>1</sup> of Lonergan’s work. Both these contexts lead quite easily to the other context that I have in mind here; the context of teaching either book. On this I have written a fair amount in these recent series.<sup>2</sup> So all I wish to do here is to repeat a previous regular claim: *Insight* is a graduate text, written without a context of undergraduate texts; *Method* is a descriptive book, not too well put together, and with final sections that fade into minimalist appeals. How, then are these two books to be taught, to be applied?

In all these facets of the question we find ourselves hovering over the question of

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<sup>1</sup>Quodlibet 20: “Applying Lonergan: A Christmas Carol” is a useful place to start.

<sup>2</sup>Again, I think of starting points. I would say that anyone interested in reviving their reading of *Insight* might start with five Cantowers 27-31. There I attempt to give a fresh start by paralleling *Insight*’s first five chapters with the first five chapters of the work by Feynman mentioned in note 9 below. What about re-reading *Method* or teaching it? It seems to me that now that good reading and good teaching pirouette’s on the serious readings of two pieces of the book. There is the quite blunt paragraph in the middle of page 287 that leaves no doubt about the descriptive nature of this introductory book. This should be mull over with the class at the beginning of a course on *Method*. The second reading zone is even more discomforting: reading the second half of page 250. That simply asks that you take a stand. This is the key page, whether to initiate the push for functional specialization in global culture, or to initiate oneself and one’s students into seriousness about, (about)<sup>3</sup>, Lonergan

beginning, and perhaps fantasizing a little about beginnings is a starting place.<sup>3</sup> Section 2 comes at this question of beginning in an apparently direct and simple question: How do I take off from, begin from, Lonergan's mention of Maxwell in *Insight*? Behind the directness is the threat of a culture tuned to treat beginnings somehow as endings: but that is an issue that must be left aside just now, even though it is a worm in the heart of our troubles.

Let us go back to that obvious context: how is that question of beginning going to help us understand the place of the title question in the present sequence of 8 *Joistings*, with its focus on Jesus? Well, think of the traditional "search for the historical Jesus" and then pose the question, How do I take off from, begin from, John's mention of Jesus in that fourth *Gospel*?<sup>4</sup> An odd twist of questioning, you must admit. But is it not

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<sup>3</sup>A *Brief History of Tongue*, (Axial Press, Halifax, 2000), chapter one, gives a starting place and a starting image in the three-piece line, placing our sick global cultures in the second half of the axial period. In Cantower 33, written for December 2004 in a remembering of the centennial of Lonergan's birth, I broke forward in fantasy to what is a key to the future. That key relates to development of symbolizations adequate to fostering a fully explanatory heuristic perspective in one's thinking. This is an enormously difficult challenge, way beyond the prose of *Insight*, way beyond present culture. In these *Joistings* I occasionally hint at it and its difficulties in pointing to the value of envisaging Jesus as an evolutionary organism, a patterned complex of chemicals in the history of the infolding of energy, the existential act of which is the infinite act of the divinity. You must agree that this is quite wild thinking: within such thinking both Jesus and the book *Insight* shift into invisibility.

<sup>4</sup>I take John Dominic Crosson as a representative figure of the tradition I mentioned, primarily because I happen at present to be reading his most recent book, *In Search of Paul*, (written with Jonathan L.Reed, Harper San Francisco, 2004). I return to that book in note 12 of *Joisting 6* and note 7 of *Joisting 7* and add two further quotations that should help you towards a perspective on the massive problem lurking in that tradition, whether we thinking of those who are within a Faith community or of those whose perspective is purely humanist, even if theist. But I would note first that there is an enrichment of one's reach for an appreciation of Jesus to be had by scholarly concreteness and modern reference. Why else would I parallel Molly Bloom and Jesus Christ in *Joisting 6*? So, the authors are quite right in their claim that "this book is new on both form and content. Its form is an equal and integrated study by a field archaeologist and a textual exegete of the world and word of the apostle Paul. That has not been done before. At least one of us has been to every place we discuss, and both of us have been several times to certain places. We want, however, not just to emphasize our presence at this or that site, but to

interesting, and does it not offer leads to fantasy? So, there is the curiosity of being lead to ask what was in the mind of either Maxwell or Jesus, apart from accounts of the doings of their lives, or anecdotes attributed to them or spoken about them.

Section 2, focuses on the mind of Maxwell, and Lonergan's minding of that mind, and the mind-reading that a serious student of *Insight* might face. And so we weave back to the question of teaching, for surely it is desirable that the student be encouraged to be serious? And, heavens, isn't that what the book is all about: mind-reading? Certainly, reading the student's own mind. But we come face to face here, or mind to mind, with the curious problems of *ethos* and adequacy and progress.<sup>5</sup> How do we want the serious students of *Insight* to mind? How do we want the serious students of John or Paul to mind? And such questions can lift us into the full cultural context through lifting them to ask, not a general question, but a question for each and all those involved in caring for culture, for progress, for adequacy: how do we want the caretakers of history to mind, and to mind minding?

But let us leave that reaching aside until we view the first simple question, about minding Maxwell's place in *Insight* and in physics.

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invite you to imagine yourselves in those locations. That is why we open major sections with a 'you are there' format"(*In Search of Paul*, ix). You might it best now to check out the other two notes and read the quotations. What, one may ask, do the authors mean by "Being There"? {I put capital letters in because, frankly, there is a suggestive parallel with Peter Sellar's film performance). Are you "really there" if you get a tour-guide through a cyclotron, or sit in musical witlessness through a Mahler symphony? I leave you to work out the parallel with Jesus mentioned in John's Gospel or Maxwell mentioned by Lonergan.

<sup>5</sup>I have stray comments below on these facets of our culture. References in Lonergan are fairly obvious. There are deep issues here regarding a linguistic feedback that would block, in a transposition of Zen, illusions that are embedded in most patterns of western communication. The solution, of course, must cycle into education from early childhood on against the run of the longer cycle of decline. But a beginning of fantasy regarding post-axial human consciousness demands that a creative minority become agonistic about their own molecular disorders, their schizothymia.

## 2.2 Minding Maxwell

In a wonderful week of collaboration, Conn O'Donovan and I ranged around, like beginners, in the writings of Lonergan. Since our work together in the 1960s I had been luckier in my opportunity to pursue Lonergan's meaning, especially in physics, so some of the exchanges were questions from Conn. One regarded Maxwell's Equations occasionally mentioned in *Insight*: Conn would like a better glimpse of them.

He had two definite advantages in this asking. First, he had no illusions about *haute vulgarization*.<sup>6</sup> secondly, he had a sound year, at one stage in his academic career, in physics, mathematics and mathematical physics. He would not be baffled by differential equations or difficulties of nominalist desire.<sup>7</sup>

But what might one say of Maxwell, or Maxwell's Equations, in *Insight*? There is the obvious need for a hands-on approach boosted by imaginative representation. I cannot repeat that here, or even produce the equations on this machine. But, yes, a little "Sleepwalking"<sup>8</sup> in the nineteenth century helps towards a sense of: a current in a straight wire giving a circular magnetic effect round the wire; a moving magnet putting a current into a local wire; an electric charge sort-of radiating outwards; an absence of 'magnetic charges' that might do that. Four statements, then, pointing to four

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<sup>6</sup>I would note that this is a very difficult achievement. The next footnote illustrates the role of luck and education in the development of this complex differentiation. It is massively difficult in present theology, crippled by subtle patterns of general bias. The drive of these essays is towards grounding a remedy for this. On *haute vulgarization* I regularly give three references in Lonergan, *Collected Works*, vol. 6, 121, 155; vol. 10, 155. But his more vigorous pointing is in *Insight*: 417[442], 542[565-6]. One of the tragedies of Lonergan's life is that he was called on so regularly to slide into the pattern of popularization.

<sup>7</sup>One must think of this O'Donovan luck in terms of one's own unluck or one's possibilities of breaking out of general bias.. In terms of one's teaching: it is too easy, in the present *ethos*, to slide into the illusion of giving the "essence" of *Insight* to students: such teaching can take on the characteristics of serial killing.

<sup>8</sup>I am thinking here of Arthur Koestler's book on Kepler and company, *The Sleepwalkers*. There may well be an equivalent book on Maxwell but the only history I have to hand is Sir Edmund Whittaker, *History of Theories of Aether and Electricity*, in two volumes, Harper, Pb.

equations. Just a beginning, but a very important beginning. Without this solid patient entertaining initial messing, a second year student in physics can get into rhythms of memorization, technique, exclusion of understanding: get a degree, of course, but become an abominable teacher.

The solid messing involves an amount of reading, depending on time and enthusiasm. A decent text in physics, backed by history.<sup>9</sup> But what of Maxwell in *Insight*? Obviously the messing allows one to read both more intelligently and more humbly, heuristically.<sup>10</sup> But what if one's aim is an understanding of Lonergan's meaning, or even of a contemporary reading that would enlarge Lonergan's meaning. Getting at Lonergan's meaning here is, of course, already tough going. He remarked once that a theologian should be able to read Lindsay and Margenau, a work he battled with the late 1940s. *Foundations of Physics* puts Maxwell in quite a complex context, one that Lonergan sublates magnificently. The sublation would require a decent-sized book. It is not just a matter of illustrating explanatory reachings. It is a matter of locating Maxwell within real geometry, and that is a massively muddled zone in both popular and professional physics.<sup>11</sup> How, then, does one think of Maxwell in the context of

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<sup>9</sup>On history, see the previous note. On physics, there are standard texts, but - as readers of the Cantowers know - I have a fondness for Feynman's Three volumes, *The Feynman Lectures in Physics*, regularly republished in paperback by Addison-Wesley. The required stuff is mainly in volume 2. I mention these volumes below as Feynman I, II or III.

<sup>10</sup>There is the broader "allowing" given by serious messing with what I have called the words of metaphysics, Wi, but that is a larger topic. Cantower 24 gives a preliminary list of these words.

<sup>11</sup>First, I note a single muddled author on the popular level, simply because it is easy to notice how that author's most recent work (Brian Greene, *The Fabric of the Cosmos. Space, Time, and the Texture of Reality*, Alfred A.Knopf, New York, 2004) messes round with Newton's bucket all the way through (see the index under *bucket of spinning water*). Contrast this with Lonergan's precision in section 3.3 of Chapter 5 of *Insight*. There is present in the literature a massive mythology of spacetime structure. Professional physics does not escape these muddles. The comment to follow and the footnotes give some pointers, but it is a complex mess. Illustrative of the mess is the technical volume in honour of John A.Wheeler, *Science and Ultimate Reality. Quantum Theory, Cosmology and Complexity*, edited by J.D.Barrow,

“Generalized Geometry”?<sup>12</sup>

One is pushed into having to think beyond **E** and **B**, Electric and Magnetic vectors. One now has a vector potential **A**<sup>13</sup> that allows one to think of the electric and magnetic fields as components of an antisymmetric field strength 4-tensor, [all of which, to most readers here, is just gibberish]. Recall reading of this in *Insight*, where Lonergan points you towards<sup>14</sup> an appreciation of the significance of tensor analysis and the strategies of determining tensor coefficients: “In the General Theory of Relativity, the coefficients are symmetric, so that  $g_{ij}$  equals  $g_{ji}$ ; and in the Generalized Theory of Gravitation, the coefficients are antisymmetrical.”<sup>15</sup> And with this one is only warming up. “The merely coincidental becomes space-time through the interrelations of gravitational and electromagnetic theory,”<sup>16</sup> but this is only a beginning of the reach for “an abstract relation field”<sup>17</sup> that would ground real geometry. One must push forwards

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P.C.W.Davies and C.L.Harper, Cambridge University Press, 2004. The final section, on complexity, is handily illustrative of the absence of Lonergan’s transposition of Aristotle’s view into a contemporary aggreformism. On that topic, Cantower 29 is useful. Indeed, the set of Cantowers 27-31, which draw into parallel the first five chapters of *Insight* and the first five chapters of Feynman’s famous volumes, are a help in this area. Especially important is a reconception of the nature of energy: see Cantower 30.

<sup>12</sup>The title of section 2.5 of *Insight* chapter 5. One need to place this in the context of the shifts of geometry during the nineteenth century.

<sup>13</sup>Feynman goes a pedagogical route round this topic in the volumes mentioned in note 9 above. Carver A. Mead takes him to task on this in *Collective Electrodynamics. Quantum Foundations of Electromagnetism* (MIT Press, 2000), in his Preface, in an interesting manner. The text mentioned in note 20 below is more integral, but it is graduate stuff. Experts will recognize the problems of locality here, recalling Aharonov and Bohm.

<sup>14</sup>The pointing is not serious unless the “towards” is supplemented by such a work as E.Schroedinger, *Space Time Structure*”, Cambridge University Press, 1955. I highly recommend this old book: it was a sort of bible to me in the mid-1950s.

<sup>15</sup>*Insight*, 147[171].

<sup>16</sup>*Insight*, 510[533].

<sup>17</sup>*Insight*, 494[517].

towards a fuller view of “Forces, Connections and Gauge Fields”<sup>18</sup> to reach the non-Abelian analogue of the electromagnetic fields strength tensor and so move into a control of the meaning of various gauge groups that would enable an advance on the full spectrum of the primary relations that specify the patterns of the physics of the universe.<sup>19</sup>

Nor can we settle for that specification, the so-called Theory of Everything or Grand Unification Theory - TOE or GUT - as an adequate theory of graviton, electron, quark, whatever. The concrete intelligibility of spacetime pulls us on into at least a rough statistics of occurrences that can fatten up into a complex thermodynamics of emergences or focus down towards a glimpse of initial cosmic events. GUTs “leaves to observation and, in the general case, to probabilities, the determination of how many masses with what momenta are at what positions.”<sup>20</sup>

And Maxwell equations, or their complex verified equivalents, hover there in that first cosmic second, reaching now into the room in which you read. “Try to imagine what the electric and magnetic fields look like at present in the space of this lecture room .... fields produced by .... coat sleeves .... and warm foreheads .... light, x-rays, radio waves .... music .... waves which originated billions of light years way.”<sup>21</sup>

And, of course, I could venture further into the light that weaves round your

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<sup>18</sup>This is the title of chapter 8 of Ian Lawrie, *A Unified Grand Tour of Theoretical Physics*, Institute of Physics Publishing, Bristol and Philadelphia, paperback, 1998. This is a book I have been recommending as a type of update of *Foundations of Physics*.

<sup>19</sup>I recommend two sets of books here, Up-to-date and graduate level there are two works by Lochlainn O’Raifeartaigh, *Group Structure of Gauge Theory*, Cambridge University Press, 1986; *The Dawning of Gauge Theory*, Princeton University Press, 1997. Pedagogically good are two books by Arthur Eddington, *The Mathematical Theory of Relativity*, Cambridge University Press, 1918 and his later popular paperback titled, I think, *General Relativity*.

<sup>20</sup>*Insight*, 494[518].

<sup>21</sup>Feynman II, 20. 8 - 20.9.

present reading and your retina,<sup>22</sup> thus reaching into zones of whose problematic nature Maxwell was well aware.<sup>23</sup> So one lifts Maxwell's equations into the world of entropy and negentropy<sup>24</sup> of energy's fragmentations and elusive localizations.<sup>25</sup> Indeed a full concrete heuristic would fill the room with a view of " the music of the spheres"<sup>26</sup> and the radiations of the Divine Pacemaker,<sup>27</sup> all infoldings of energy's radiant pilgrimage.<sup>28</sup>

### 2.3 Concluding Section

I suspect that the previous section is a discouraging read for the present

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<sup>22</sup>Helpful here are chapters 35 and 36 of Feynman, vol. I.

<sup>23</sup>Feynman I, chapter 40, pp.8-9, dispels the myth that all was well in physics up to the end of the 19<sup>th</sup> century. He makes the point from papers of Maxwell, 1859 and 1869.

<sup>24</sup>A good introduction to this topic is E.Schroedinger's little book, *What is Life?* These are popular lectures given in Trinity College Dublin in the mid-1950s, available in various formats. The audience grew by the week. I take the opportunity here, however, to recall that old danger of the merely popular. If you is serious about a world view, then one has to get down and dirty. If you wish to grapple with the entropy of the universe, it is as well to start in one's own kitchen with the entropy of the fridge. Here I find that it is better to join the engineers, rather than staying with pure physics. My own old book on the topic is *Thermodynamics. An Engineering Approach*, by Yumus Cengel and Michael Boles, McGraw-Hill, 1989. I recommend it or some such book in your struggle to understand Maxwell in *Insight*. One might puzzle about why Lonergan did not discuss entropy in *Insight*. I suspect that Lonergan gave up on the task of integrating that part of Lindsay and Margenau into his reflections. But you might also consider how entropy and statistical mechanics can be sublated into a full theory of emergent probability.

<sup>25</sup>The mess of standard Quantum Mechanics remains with its abundant mythology. Carver Mead ( see note 13) shakes it up a little, as does John Bell in his various works. Feynman vol. III gives a decent start, where one can diagnose elementary mistakes. But the troubles go deeper into the heuristics of the geometry adequate to present particle families, and to the character of secondary determinations in real dispersedness.

<sup>26</sup>Shakespeare, *Pericles*, V.ii, line 231. On Shakespeare's mature vision in this play, see section 5 of chapter 2 of *Lack in the Beingstalk*.

<sup>27</sup>See *Joistings 6*, "Jesus My Pilgrim Pacemaker".

<sup>28</sup>Section 4 of chapter 15 of *Insight* opens up this topic. Further clues are available in Cantower 30.

generation of students of *Insight*. And in that you have my sympathy. When I first faced into *Insight*, in 1957, I had come from studies that included Maxwell, and some of those sublations of Maxwell that I mentioned in section 2: yet I could make almost no sense of chapter 5 of *Insight*, and am still struggling with it. How might one teach it, even if one is incapable of intussuscepting it? The key lies in following Maxwell's advice of 1877 in the face of problems of statistical mechanics. He 'confessed his bewilderment and stated that nothing remained but to adopt the attitude of 'thoroughly conscious ignorance that is the prelude to every real advance in knowledge.'"<sup>29</sup> This is the personal key that may be picked up and implemented by any teacher.

The key provided brilliantly by Lonergan. *Insight*, the graduate text, was and still is an impossible personal climb. A good teacher is one who can share the struggle with a class within the confession of bewilderment. But the elementary descriptive book, *Method in Theology*, point us towards a communal confessing. A first level of confessing is the confessing of the need for a minimalist division of labour. But the long-term operative confessing is the brilliance of the book *Method*: for it invites a structure of that division, that cyclic collaboration which, so to speak, puts *Insight* into the vortex, spinning it in as an expressed challenge in the twist through dialectic. *Insight* may thus become a graduate text in later generations, with its underpinning in a surround of adequate undergraduate texts.

But what of *Method* as teachable now? This is a trickier question<sup>30</sup>. In so far as it is taught as something to be implemented slowly so as to gradually get the global community of culture towards the differentiations and sophistications of consciousness that are adequate to progress and to the beginnings of the third stage of meaning, all will be well. But there is the danger that the descriptions of the book be mistaken for explanations. That danger will be faced in these next generations, as the danger of

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<sup>29</sup>Quoted from Paul A Tipler, *Physics*, Worth Publishers, 2<sup>nd</sup> ed., 1982, 844.

<sup>30</sup>See note 2 above for an elementary start.

under-reading *Insight*, through the recycling process.<sup>31</sup> But perhaps it can be faced by switching the question about Maxwell in *Insight* to questions about various characters in *Method*. So, one may ask, e.g., How do I take off from, .... Lonergan's mention of Scheler in *Method*? The answer to that question is vastly different from the question about Maxwell. It is an extremely complex question regarding the developments of human studies in these past centuries. But perhaps we can get at it by twisting the "How do I? question" round in an elementary manner, and this we do in the next *Joisting* by asking what occurs to us when we turn towards doing anything.

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<sup>31</sup>This has been a central topic of the entire Cantower Project, but focused more precisely in SOFDAWARE1-8, Quodlibets 11-12, and given a broad context in Quodlibet 17: "The Origin and Goal of Functional Specialization". *Joisting 8* adds a new context.